

Economic and Social Commission for Asia and the Pacific

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**Reconciling Actors' Preferences
in Agricultural Policy**
—
**Towards a New Management
of Public Decisions**



Photo: A. Jesús



United Nations

Introduction:

A Book for What? A Book for Whom?

A handbook, blended with practical cases and theory

The present book is designed, first, as a handbook, conceived for analysts and scientists already involved or willing to involve themselves in the remarkable and difficult task of improving public decision processes. Step by step, it presents a comprehensive approach, starting from the definition of the objective of a public decision (like a policy for instance) and going, from there, through the identification of stakeholders, the identification of what is at stake, the gradual involvement of stakeholders into a decision process and the construction of common plans for action and their implementation.

The approach, named “the RAINAPOL¹ approach”, consists of a carefully crafted combination of tools and methods, many of them new and specifically designed for the purpose. Starting from Chapter II, the different phases of the approach are detailed in a chronological way. For each phase, an introduction explains what needs to be done, why and how it should be done, and a conclusion summarises what has been achieved and what remains to be tackled in the following step. Each tool or method is introduced within the corresponding phase of the approach. There its purpose is explained, the process of implementation is detailed, and practical examples illustrate the results that it can achieve.

Beside these methodological aspects, the book also provides in-depth information on two cases for which the approach has been applied. These two cases serve as illustrations for all the different steps of the approach. They can be found throughout all chapters of the book.

The first case, located in Indonesia, concerns the improvement and sustainability of poor farmers’ income in West Java province through commodity development and institutional improvement. This case deals, in particular, with the southern hilly and dry area of the province, where difficult agro-climatic conditions and low infrastructure level limit agricultural development. The strong impact of the Asian monetary crisis and the subsequent recognition of the buffer role of the agricultural sector underline the importance of this topic in a province where nearly 40 per cent of farmers have no land.

The second case, located in Viet Nam, concerns the improvement of the performance of agricultural products’ commodity chains and, in particular, the relation of farmers with agricultural goods markets. It is focused on one of the most important agricultural regions of the country, the Red River Delta and illustrated by the example of the rice and the pig commodity chains, probably the two main food sources of the country. In Viet Nam, where free market only started 10-15 years ago and where agricultural policies have been oriented toward production increases for years, this topic, related with market organisation and product quality, is of particular relevance.

To complete the methodological and practical aspects of this book, the first chapter, along with the beginning of each following chapter, has been devoted to the presentation of the RAINAPOL approach theoretical framework. In these sections, other existing approaches and concepts related to public decision-making are reviewed. This review provides insights on the foundation of the RAINAPOL approach and clarifies its rationale and its framework.

¹ Reconciling Actors’ preferences in Agricultural Policy.

A reader's map

As the content of this handbook allows, a reader can open it for various reasons: an interest in the whole approach, an interest in the practical cases of implementation in Viet Nam and Indonesia, an interest in theoretical development, or any combination of the three.

For a reader mostly interested in theoretical development, it is possible to jump from one theoretical section to another. As it stands, the whole first chapter (starting p. 7) reviews various approaches that have tried to deal with public decisions, it considers their limits and proposes a framework that would enable to overcome them. In the second chapter, considerations on the stakes behind the definition of a policy objective can be found in the four opening paragraphs (p. 15), while the importance of stakeholders identification is discussed in the first four paragraphs (Identifying stakeholder ..., p. 19). The beginning of the third chapter (introduction and part A, from p. 33), argues the importance of identifying what is at stake *for each actor*, compared to more classical stake identification, and proposes a classification of the important types of stakes. Chapter IV (Tools for Interaction ..., p. 73) deals with the issues of interaction and participation in policy-making as keys to successful reforms. It goes through the role of information (p. 74) and the importance of stakeholder's involvement (p.75). Finally, Chapter VI (p. 119) reviews a general presentation of the whole approach and the sequence of stages that make it up.

A reader interested in the practical implementation cases can focus their attention on the different illustration boxes located in four of the five chapters. In Chapter II, Box 2 (p. 17) and Box 3 (p. 18) present cases of policy objective definition in Viet Nam and Indonesia, while Box 4, 5 and 6 concern stakeholders' identification. Box 4 (p. 21) deals with the use of institutional analysis for stakeholders' identification. Box 5 (p. 22) and Box 6 (p. 26), and their following tables, detail the use of expert meeting techniques to identify farmers and actors of a commodity chain. In the first part of Chapter III, the importance of misperceptions among stakeholders is illustrated by examples from Viet Nam (price levels in the pig commodity chain, Box 7, p. 35) and Indonesia (agricultural development problems in west Java, Box 8, p. 36). In the following part of Chapter III, important sections are devoted to the presentation of field results. Findings on the farmers' situation in Viet Nam and Indonesia can be found in (Comparative classification, p. 39), findings obtained through inter-country case comparison can be found in Chapter III (Case comparison, p. 43), and findings on the situation of Viet Nam rice and pig agri-food systems can be found in Chapter III (Commodity chain analysis, p. 45)². And in the last part of the chapter, results on stakeholders' inter-relations obtained through an institutional analysis method applied to the case of Viet Nam rice and pig agri-food systems performance are displayed from Box 16 (p. 55) to Table 25 (p. 63) and from Box 18 to Figure 13 (p. 65 to p. 70). Chapter IV presents various examples of the use of participatory techniques to either describe and analyze a situation or promote conciliated decision-making among stakeholders. Box 19 (p. 77) illustrates the advantage of expert meeting techniques compared to statistical analysis in the design of a district typology in Indonesia, Box 20 (p. 80) points out the interest of organising validation meetings with stakeholders using the pig and rice agri-food systems in Viet Nam as examples, and, on the same cases, Box 21, 22 and 23 (p. 84 to 88) demonstrate the outputs that can be achieved through the organization of policy arena workshops. Finally, in Chapter V, the implementation of a prospective workshop on the future strategy for pig commodity chain development in Viet Nam is illustrated from Box 24 to Box 28 (p. 96 to 103).

² Additional detailed results concerning commodity chain flows in northern Viet Nam are presented in the appendices (p. 132 to 139).

For readers interested in the whole RAINAPOL approach, its methods and tools, all chapters of the book should be read. Skipping the theoretical parts and the illustrations from practical cases mentioned above is an option, but doing so can hinder proper comprehension of several aspects of the approach. However, since the approach combines different types of tools and methods, which are all presented in this book, focusing on some of these is possible. The different methods and tools presented in the book are listed in Table 1, along with their locations.

Table 1. The different methods and tools presented in this handbook

Methods and tools	Chapters concerned	Pages
Consultative definition of policy objectives	II	16
The PACT institutional analysis method <i>(analyzing actors' inter-relations and facilitating conciliation and collaborative decision-making processes)</i>	II	20
	III	53
	IV	81
Participatory Rapid ACtor Typology method	II	22
Expert meetings for commodity chain actors' identification and characterization	II	25
Commodity chain analysis	III	45
Expert meeting techniques <i>(participatory information generation)</i>	IV	76
Validation meetings <i>(participatory results discussion and validation)</i>	IV	79
Policy arena workshops <i>(collaborative and participatory decision-making preparation)</i>	IV	81
Prospective analysis workshops <i>(collaborative and participatory strategy building and implementation scheme designing)</i>	V	95
Short presentations of simulation tools: ➤ MATA models <i>(economic simulation model for the agricultural sector)</i>	V	107
➤ Simulation within the CADIAC method <i>(simulation of cost and margin evolution within an agri-food system)</i>	V	109
➤ Multi-agent systems models <i>(simulation of actors' interaction and actors-environment relations)</i>	V	114

Applying the RAINAPOL approach

As with any methodological development, the RAINAPOL approach is not an all-purpose and all situation approach. To understand the context in which it can be effectively used, it is worth detailing how it has been applied in the case of Viet Nam and Indonesia and to derive from there general advice for future users.

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The implementation of the approach, within the “Ecopol project”³, followed the same pattern in Viet Nam and in Indonesia. Prior to any activity, contacts were made, in each country, with various actors from research and development organisations, and relevant authorities (Ministries, Provincial authorities, etc.) to present the general frame of the approach, its potentials and to assess their interest for collaborative implementation. Once their interest was clearly expressed, the discussion aimed at defining with them how to carry out the task and on which issue. In both countries, it resulted in defining a team made of national researchers and analysts that would be trained to grasp the approach and apply its different tools and methods. In Viet Nam, the appointed team was made of six researchers from the Viet Nam Agricultural Science Institute (VASI), while, in Indonesia, it consisted of analysts and researchers from various bodies all working in the West Java province (BAPPEDA, BPTP, KANWIL, IP2TP, ICASERD).

The role we had as “foreign experts” was to support a national or local project rather than directly implement it. This meant training the selected teams and providing support and monitoring for the application phases. Training here encompasses more than just gathering people in a room for several days to make them acquainted with new tools and methods. For each stage of the approach, practical training was provided for field implementation, for the analysis of results, the preparation of their presentation and for their presentation and discussion with stakeholders. This enabled a true command of the approach from the team. At the same time, it was the team of national scientists and analysts who directly implemented the approach, contacted the different actors for interviews, surveys, workshops, etc.

After completion of the Ecopol project, four types of results have been achieved. First, a new approach has been designed and tested, and is now presented in this book. Second, a team of scientists and analysts has been trained in the approach and its implementation in each country. Third, the investigation of the topics chosen in Viet Nam and Indonesia has produced information now compiled and available. And four, practical results have been achieved in the field to improve the stakeholders’ situation and are monitored by the team trained during the project.

Important considerations have been taken into account to design the implementation process of the project presented above, and need to be outlined.

The implementation process of the project is quite unusual compared to classical projects and expert consultation supporting decision-making processes: it is not based on the expertise of “outside” consultants and it is not only aimed at producing recommendations for a given government. Training national teams in the approach and helping them to implement it provides the country considered with both a new capacity to tackle public decision problems and specific knowledge and insights on a given problem. Moreover, this capacity does not stop at saying “considering this and that, the following decisions should be taken...”; it provides a means to support decision makers go further into the implementation phase through a participatory and collaborative process which involves the different stakeholders concerned and ensures higher chances of success.

The specificities of the approach bring about some important implications for those who decide to engage in the process. The persons who implement the approach cannot maintain a position of detached observer. From one stage to another, they build close relations with the different stakeholders. They gradually involve themselves in a process of change, not as

³ The Ecopol project (“Economic and policy analysis for the eco-regional approach in Southeast Asia”) is a joint CGPRT-Cirad research and development project. It deals with agricultural and economic policies having an impact on agriculture and agriculture-related sectors (agro-industry, trade, services and consumption mainly) and institutional policies. The general objective of this project is to provide methodological support for the definition of efficient economic and institutional policies for the sustainable development of the agricultural sector.

decision makers but as facilitators helping stakeholders design and implement the change in a collaborative way. In a similar manner, the decision makers who request or support the use of the approach do not simply ask for a report to be ready on their desk, they involve themselves in a process of discussion and co-decision with other stakeholders to make things change.

Finally, several conditions can be associated with the proper use of the RAINAPOL approach. Applying this approach supposes that there is a problem of public decision, involving a diversity of stakeholders, and that there is a will from one or several legitimate stakeholders in the system to see it solved. Then, it becomes possible and effective for a team of scientists and analysts to make use of the approach or for a project to train such a team and help them apply the approach. It also supposes that the team members are ready to involve themselves in a process that goes far beyond observing and describing a situation.

Such are the conditions in which we feel the approach should be used and in which it has great potential.

Chapter I

Reconciling Actors' Preferences in Policy Definition: Theoretical Background

Policy analysis as an answer to policy failures

Policy analysis, considered as a method to promote more efficient and effective policies, has undergone important changes over the last fifty years. Each time policy definition processes have not been followed by the results they were expected to produce, improvements or radical changes in policy analysis have been proposed. In an initial phase, policy analysis was characterized by a special focus on strengthening hierarchical bureaucratic systems in developing countries. This led to strong inefficiencies and poor performances (Silverman, 1997; Nicholson, 1997). In reaction to these shortcomings, a following phase, grounded in the concepts and techniques of neo-classical economics, brought up stabilization reforms and structural adjustment processes (Brinkerhoff, 1997). However, it did not yet ensure the success of policies.

“Many of the initiatives undertaken had not produced changes anticipated in policy behaviour or economic performance” (Oakerson, and Walker, 1997, p. 21).

“Technically ‘correct’ policies often were not adopted or implemented” (Brinkerhoff, 1997, p. 3).

For some, grouped around the concept of ‘new institutionalism’, these poor results come from the fact that policy analysis has not taken into account the complexity of decision-making. Their main criticism is that the initial failures of centralized decision-making processes have led many analysts to advocate free markets to replace state management, as if nothing existed in between, while, in fact, hierarchical state management and self co-ordinating market mechanisms interact with a third type of institution¹: the existing rules and arrangements made by stakeholders at all levels (Ostrom, 1997). New institutionalists underline the particular importance of these institutional arrangements, which can “create very different incentives [leading] individuals to interact in either productive or non-productive ways” (Oakerson, and Walker, 1997, p. 22). They also stress the importance of the implementation processes in policy reforms (Brinkerhoff, 1997) very often neglected once the usual policy definition phase has been dealt with.

For others, the failure of past policies is due to the poor participation² of local stakeholders. “Rural development activities have typically been conceived nationally and financed either from national revenues or foreign aid. Such arrangements have affected the standing of farmers in the policy process” (Nicholson, 1997, p. 115). For them, the low level of participation is key to explaining opposition to and inadequacy of policy reforms. They

¹ In this document, **institutions** are to be understood in the sense given by D.C. North: “Institutions provide the framework within which human beings interact. (...) Institutions are a set of rules, compliance procedures, and moral and ethical behavioural norms designed to constrain the behaviour of individuals” (North, 1981, p. 201-202).

² (...) **Participation** [is] a “process through which stakeholders influence and share control over development initiatives, decisions, and resources which affect them” (World Bank, 1996, p. 3).

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advocate bottom-up participatory processes, grounded locally to foster development through non-governmental organizations or local associations. They will be referred to as “local oriented”.

To overcome policy failure problems, the first group of analysts proposes to add tools for institutional analysis and policy management to the commonly used cost/benefit analysis and macro-economic studies. For them, the analyst's task doesn't stop with the policy definition process. It continues afterwards to ensure that, even though reactions will occur, the implementation phase will go on. They consider “policy analysis and design as a process, rather than simply a product” (Brinkerhoff, 1997, p. 6). This process aims to be “useful to policy makers in helping to guide policy development as it unfolds” (Brinkerhoff, 1997, p. 6).

The second group doesn't propose new ideas for better policy analysis. It considers that problems lie more in the initiation of socio-economic development than in policy-making and therefore focuses on local decision-making and action processes, seen as foundations for effective and efficient development.

Similar conclusions from the new institutionalism and local oriented approaches

Most policy analysts see policy definition as a process in which policy makers (i.e. members of a government or assembly representatives), pondering the available information on the current situation and its problems, decide on the design and the implementation of reforms. “Policy decision-making is largely a top-down, non participatory process, confined to a narrow set of decision makers” (Crosby, 1996, p. 1404). It is clearly a process in which it is considered that those affected by the reforms will behave in predictable ways so that the overall effect of the reform will be as expected.

Taking this into consideration, the ‘new institutionalists’ propose to improve the available information, using tools to supply useful institutional knowledge to policy makers in addition to the technical and economic information usually provided. They also consider policy definition as a process with duration and therefore propose the analyst's guidance be continuous along this process. In doing so, their main focus is to help the policy makers do a better top-down job.

However, they also acknowledge that decision-making doesn't take place in a world without interactions. “Policy makers are confronted with new demands from previously excluded groups to participate in the policy process” (Brinkerhoff, 1997) and “successful reform depends on the co-operation of a very large number of disparate actors with discretion”³ (Oakerson and Walker, 1997, p. 38). Through these remarks, it appears that the success of policy measures involves not only those in charge of the definition and implementation process (mostly the national assembly, the government and its administration), but also those who will be affected by the policy. The reaction of the latter to a reform can make its success, strongly bend its objectives and outcomes or lead to complete failure. Such considerations have strong analogies with the conclusions of the local oriented approaches.

Policy-making can be seen as an institutional process in which changes can be made on the governance rules (Oakerson and Walker, 1997) and new institutional arrangements for implementation can be defined (Nicholson, 1997). But institutionalists also remind us that “institutions [...] create incentives that influence, but do not determine individual choices” (Nicholson, 1997, p. 23).

³ Discretion refers to individual choice.

In other words, it can be said that individuals, at all levels, have discretion to take decisions that can strongly affect the outcome of a policy. Farmers decide which crop they will plant, which type of animal they will raise, whether they use their labour for one activity or another. Traders can choose which product they want to sell or buy, and whether they will try to expand trade to further regions or whether they prefer to concentrate on a specific zone, whether they want to make a risky transaction or not. Even local authorities usually have discretionary power in the application of laws and procedures at their level.

The actual decision process that will determine the resulting effect of the policy appears, thus, to be more complex than just a group of policy makers modifying the economic and institutional environment to make other actors change their behaviour. Other types of decisions, made at various levels by individuals, organizations or associations, will interact with policy makers' decisions, and it is this interaction that will determine what the final output of a reform will be like.

We argue that decision does not entirely belong to those commonly designed as 'decision makers'. We argue that any actor is a decision maker at a certain level. In fact, looking at the level of the whole system, decision can be seen as an interaction process where the collective decisions of policy makers (collective in the sense that they are made by an organization, considered to be representing the interest of all members in the society, for all the members of this society) meet the private decisions of individuals (and different types of decisions as well). Most of the time, though, this combination is not prepared for. These different kinds of decisions meet each other on the same reality, but the outcome of such encounter is only known afterwards.

"Many policies and projects in the past have not met their stated objectives because the consequences of the policy are perceived to be adverse by one or more stakeholder groups, and therefore, lead to non co-operation or even open opposition by those stakeholders" (Grimble and Chan, 1995, p. 113).

"Interaction among (...) actors (...) often produces misunderstanding, conflict, and power struggles rather than effective collaboration in policy/program design and implementation that addresses critical development problems" (Brown and Ashman, 1996, p. 1467).

In fact, actors affected by a reform often may not know its objectives, may not understand them, may not agree with the way changes are implemented or may not see the new proposed institutional arrangements as adequate to tackle the problems at stake. Of course, it is also likely that most stakeholders will not have a broad knowledge of all the elements that lead to craft a reform. They probably see the situation from their personal point of view with the information that is available to them. They only have a partial perception of the situation and a partial perception of the reform and its implementers. But their real reaction will be based on this partial information, not on a comprehensive one.

The situation of policy makers may not be that different in terms of perception. The simple existence of policy analysts and policy analysis stresses the fact that policy makers need information to make better, more effective and more efficient policies. The statement of the new institutionalists is clear on this point. We can therefore assume that policy makers, like all the other stakeholders, take decisions on a partial knowledge of the situation and the actors they want to deal with. It is the role of the policy analysts to help them acquire more accurate and relevant information. But it would be very questionable to state that such information may be completely sufficient. "The variables involved in policy change are numerous (...) and interact in complex and incompletely predictable ways that are context specific" (Brinkerhoff, 1997, p. 1).

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Thus, policy definition and implementation is undertaken in a context where interaction with all kinds of other decision levels is strong and takes place after the policy decisions have been made, and in a situation where all stakeholders (including policy makers) have only a partial knowledge of what the real situation is. This hinders strongly the abilities of policy reforms to achieve their objectives and can, therefore, lead to a waste of time and money, and even trigger conflicts. "Failure to effectively implement policy wastes increasingly scarce resources, undermines prospects for sustainable development, and eventually threatens the legitimacy of the regime itself" (Brinkerhoff, 1996b, p. 1395).

Dealing with interactions in policy management

Trying to cope with reaction and interaction problems, several analysts have proposed methods and tools assembled under the common appellation of 'Strategic management' (Crosby, 1997; Goldsmith, 1996; Grimble and Chan, 1995; Morton, 1996). Their idea is to gather knowledge on how other stakeholders may react to a policy reform and to organize this information in a way that can help policy makers.

Tools such as 'Stakeholder analysis' and 'Political mapping' use simple diagrams to display the positions of the main stakeholders regarding a given policy measure. With this information, policy makers can prepare a strategy to make alliance with pro-reform stakeholders and prevent strong opposition from those who are against, before letting their reform out. The analyst using these tools considers that managers have limited resources and that the cost of broad participation can be very high (Crosby, 1997). They advocate the preparation of a strategy to handle the reaction of the main stakeholders in the implementation process.

Strategic management tools are clearly designed for policy makers. They do not modify the situations where policies face conflicts and misunderstandings; they simply give policy makers information to help them impose reform with better chances of success. With a similar point of view, Oakerson proposes to limit the occurrence of potential opposition and conflict by providing better information on the reform in order to convince most stakeholders of its necessity (Oakerson and Walker, 1997).

On one hand, with strategic management tools, better information is provided to policy makers on the capacity of important stakeholders to oppose changes and on the opportunities to make new alliances (Mitchell *et al.*, 1997) and, on the other hand, better information is provided to the different stakeholders on the policy measures.

These methods deal with the implementation of policy measures once the measures have been defined. They suppose that the policy's objectives are good, that the new institutional arrangements it proposes are workable and that stakeholders simply need to be convinced or lobbied for the reform to be successful. They are useful for centralized policy management.

However, the fact that a reform is passed and implemented doesn't mean that it will be successful. Once the reform starts to be applied, interactions with the decisions of all other stakeholders will still occur. Those in charge of the operational application will still have possibilities to interpret and modify the measures defined by policy makers. And those directly affected will still have possibilities to react in ways that may counteract the initial objectives. With better information campaigns, stakeholders may have a better knowledge of the state objectives, constraints and means of action. But little is still known on the objectives, constraints and means of action of the other actors. Since the outcome of the interaction of different layers of actions is difficult to predict, policy management still faces strong risks of failure.

Decision is a complex process occurring at different levels with different types of actors, but strategic management methods do not help manage multiple level decision interactions.

They can only strengthen the decision of one of these actors. Therefore, we argue that the challenge of policy analysis is to propose tools and methods to promote efficient co-ordination of the decisions made by policy makers with the decisions of the other stakeholders. Such tools and methods used for policy definition and implementation would strengthen the efficiency, the sustainability and the acceptance of reforms.

Because of the existence of discretion at all levels, better co-ordination of the decisions made by policy makers and other actors cannot be attained through top-down procedures. To achieve co-ordination, an interactive participatory process for policy definition and implementation has to be built. Moreover, for such a process to be successful, information on the technical and economic situation and on the actions, perceptions and aspirations of all stakeholders has to be generated and shared.

Policy: from a collective good to a public good

Much experience has been obtained on participatory techniques and processes. Participation of stakeholders has often been used to prepare the definition of projects, to define its operational content, to implement pre-defined activities within a project or to monitor and evaluate projects' results. Participatory rural appraisal (PRA) methods are today commonly recommended and used in the implementation of programmes or projects in order to involve local communities and, thus, make sure that socially and economically sound actions are identified and promoted (Chambers, 1999; World Bank, 1996). Participatory methods are also recommended in the field of project monitoring and evaluation (Estrella and Gaventa, 1998; Narayan-Parker, 1993) to ensure that stakeholders can orient actions according to intermediary results and the evolution of the situation. It has also been shown that participation of local stakeholders can improve the chance of success of a project and that it can also initiate new development dynamics (Brown and Ashman, 1996).

However, participation is not a fixed procedure. Villagers deciding upon the objectives of a local project but hiring workers to dig a canal can also be called participation. The way the word is used varies widely. In fact, the word 'participation' should always be accompanied with a specification of the type of participation considered, as the implications differ widely.

In most cases, participatory actions are undertaken within the framework of a project and they mainly aim at enhancing the chance of success of the project by involving stakeholders in some part of the process. Very often, decisions have already been made by a central organization (the project head or some government organization) and stakeholders' participation is used to make the project work better or to justify existing decisions.

Oakerson showed that "reform (...) has the attributes of a collective good", that "successful reform depends on the co-operation of a very large number of disparate actors with discretion [and that] no one has incentive to commit to (and participate in) reform unless nearly everyone else is effectively committed" (Oakerson and Walker, 1997, p. 38). Committing to a reform would mean adhering to its objective and design although these have been decided prior to this new appearance. But reform is often seen, at local levels, as the appearance of an additional actor or of additional actions in a system where stakeholders already interact. To many actors, it is more like an external event that changes their environment and to which they should adapt. The fact that reform is felt as an external event is likely to provoke reactions, but very unlikely to promote commitment.

To improve the chances of having nearly everyone commit to a reform, the reform should be designed and implemented with the participation of everyone in a common process. Participation in both the definition phase and the implementation phase is crucial for successful policies. "It is (...) important to understand that problem definition is a first important outcome

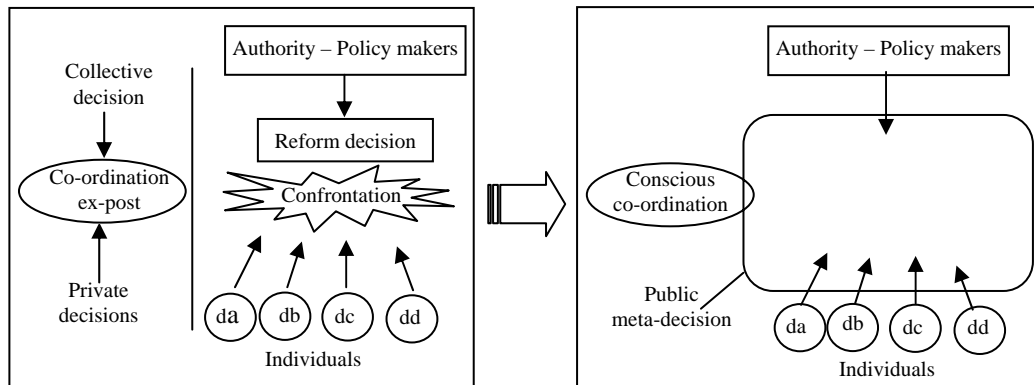
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of joint action, and not just its starting point" (Altenburg and Meyer-Stamer, 1999, p. 1698). The type of participation that would be required then is interactive participation (Pretty, 1995) of policy makers at different levels, of the actors directly and indirectly affected by the reform and of the actors potentially concerned by the implementation of the reform (public, private and associative actors).

We argue that, for a reform to be successful and durable, the policy analyst's role is to help stakeholders move from a plurality of disparate decisions made with partial information, that do not aggregate in the form of a consciously managed process, to a collaborative managed decision. No stakeholder should be excluded from the process, and the sovereignty of existing individual or collective decisions should not be disputed. "Designing and implementing significant long-term change may require joint action by many different actors – grass-roots groups, non governmental organizations (NGOs), private co-operations, government agencies – who together have the knowledge and resources required" (Brown and Ashman, 1996, p. 1467).

From reform as a collective good, the challenge is thus to help stakeholders build decision as a public good. Decision as a public good is a decision on the co-ordination of the existing sovereign individual and collective decisions. Interaction among multiple level decisions is not seen as a result observed afterwards anymore; it becomes a construction where all stakeholders participate to ensure the necessary changes in a system. It transforms a policy into a public meta-decision (see Figure 1).

Figure 1. From policy as a collective good to policy as a public good



Participatory generation of information to be shared among stakeholders

Interactive participation is clearly crucial to build policies as public goods, but it may not be sufficient. Stakeholders would still struggle to set up common decisions each with a partial knowledge of the situation. Without sufficient information on what is at stake in the system regarding the different decisions they can take, actors may make the wrong choices. Wrong choices can have bad consequences on the actors' own activities, but they can also lead to tragic outcomes for a society when they are made by well meaning officials (Ostrom *et al.*, 1993). Moreover, the lack of information may cause important misinterpretation of other actors' intentions, lead to misunderstandings or even conflicts. Partial information thus limits

interactive participatory policy-making in two ways: it inspires ill-fated individual decisions and it can limit the efficiency of collective or common decisions when interactions are at stake.

Concerning the second point, it has been proved that, within a situation where social interaction is strong, perfect shared information is essential to reach the best of solutions, a Pareto equilibrium (Defalvard, 1993). This means that without sufficient information shared by all stakeholders, satisfactory stable situations will prove almost impossible to achieve. The consequent instabilities and frustrations would make individual decisions very difficult and would repress the emergence of efficient forms of institutional arrangements or ruin the effectiveness of existing ones, market included. It was shown that disparate information scattered among stakeholders, referred to as information asymmetries, can lead to the elimination of mutually productive activity entirely (Akerlof, 1970).

However, working out the lack of information is not an easy task and it is not a task that individuals can undertake on their own. When dealing with public and collective actions as well as with market co-ordination processes, the costs entailed by problems of adverse selection, moral hazard, shirking, free riding, and corruption can be very high. Most stakeholders do not have the means or do not want to bear these costs and overcome the difficulties related with this lack of information.

This is particularly important in the construction of efficient common actions and co-ordination processes. The existence of above mentioned costs makes agreement and collaboration very difficult to reach and very likely to fail. For instance, it is very likely that partial non shared information will lead to potential conflicts that wouldn't objectively appear otherwise (Box 1). On the other hand, making relevant information available to the different stakeholders can help them take good decisions and build beneficial arrangements with others.

"The more information each party has about the characteristics of the other parties to an agreement and about the time and place context of the activities to be undertaken, the lower the strategic costs [induced by adverse selection, moral hazard...] to which they are likely to be exposed" (Ostrom *et al.*, 1993, p. 48).

Box 1.

How partial information may lead to conflicts when none should occur

Four different persons want the same orange. Most people will consider this is a conflicting situation. But it can also appear that:

- the first person wants the peel,
- the second person wants the juice,
- the third person wants the pulp,
- the last one wants the seeds.

In this case, there is no objective reason for a conflict. Each of them, looking at the same reality, pays attention to different qualities. If the only information available concerns the orange, all of them want it. If there is sufficient information shared about what each person wants in the orange, it becomes possible to find an agreement.

Moreover, there may be only one orange at present, but it is also possible to reach an agreement on growing more in the future.

For actors to make efficient decisions, they need information on the physical, technical and economic aspects of reality (Klitgaard, 1991). And for actors to build strong agreements with effective commitments, they need information on the social and institutional aspects of reality.

Acquiring and organizing both kinds of information is necessary but not sufficient. The information has to be made accessible and ready to use for all stakeholders, it has to be shared. According to Elinor Ostrom, "[some information] is usually developed by a relatively small

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number of people; the problem is how to make this available to widely dispersed communities that could make use of it” and “[some information] is (...) widely dispersed; the problem here is how to aggregate it and make it available to a relatively small number of public officials.” (Ostrom *et al.*, 1993, p. 53). The problem of where information is and to whom it should be distributed is, in fact, more complex (Figure 2). The fact that information has been developed by a relatively small number of people doesn't mean that it is available to policy makers; it may be necessary for those who developed it to share it with them. Similarly, the fact that information is widely dispersed doesn't mean that stakeholders within dispersed communities have shared it; it would prove useful if this information could be made available to all of them as well. More generally, it should be considered that efforts are needed to generate, aggregate and share any type of information among all the stakeholders.

“If the nature of the potential hazards for all participants is more transparent, it may be easier to decide on the terms of a contract” (Ostrom *et al.*, 1993, p. 48).

Figure 2.

		Type of stakeholder	
		Concentrated (policy makers)	Scattered (beneficiaries, intermediaries)
Type of information developed	Concentrated among few persons	Problem of information sharing	Problem of information diffusion
	Dispersed among many	Problem of information aggregation and targeting	Problem of information aggregation and diffusion
	Missing	Problem of information generation and targeting	Problem of information generation and diffusion

Generating and sharing information for all stakeholders is not an easy task. An important point to bear in mind is that the objective is to help actors build efficient plans of action for the future. This implies that information should be generated in such a way that actors will be able not only to use it but also to participate in its generation. The participation of stakeholders in information generation would ensure information relevance along with a form of accuracy verification. It would also ensure that the information newly generated is shared and ready to use for stakeholders. Using participatory techniques for information generation can help achieve this goal. For similar reasons, wide participation in information sharing is important.

We have shown in this chapter that policy decisions always interact with decisions of stakeholders in unpredictable ways, and that all stakeholders are, at some level, decision makers. We have argued that improving the success and sustainability of policy management depends on changing policies into public meta-decisions. To do so, interactive participation of all stakeholders should be constructed and strategic information generated and shared in a participatory way. The following chapters of this book will now present tools and methods to achieve this goal.

Chapter II

Multiple Stakes, Multiple Actors: Defining a Policy Objective, Identifying Stakeholders

To support better policy management it is necessary to know what problem a policy is trying to solve, which actors are concerned and what is at stake for these different actors. No matter how obvious the incorporation of these three points in policy analysis may appear, the practical methods to generate such information are not so elementary, especially when common decision processes are sought after. As Derick W. Brinkerhoff points out: “because many of the technologies for socio-economic development are only partially understood or are site-specific, lack of agreement on what to do, for whom, and how is highly likely.” (Brinkerhoff, 1996a, p. 1504). This chapter and the following will present methods to deal with these apparently obvious points.

Defining the objective of a policy

An important aspect of policies that needs to be addressed is the strong unpredictability of their effects. “Long-haul reforms [...] extend beyond the narrowly economic and technical to include social, political, cultural, and organizational dimensions, which interact in complex and often unforeseen ways” (Brinkerhoff, 1996b, p. 1395).

A policy is a centrally defined decision confronting other decisions made at various levels by various actors. This defines a system where interactions are important. It has been proved that social interactions can generate multiple Pareto equilibrium but also de-synchronize actors’ decisions (Binder and Pesaran, 1998). The de-synchronization of actors’ decisions makes it difficult to achieve an efficient co-ordination of stakeholders’ actions. Combined with the existence of multiple equilibriums, it defines a system where a satisfying and stable situation is not likely to be reached. In fact, in such a system, the achievement of a stable equilibrium requires total, perfectly shared information or agreed upon collective institutions (Defalvard, 1993).

In most cases, a policy takes place in an environment where information is insufficient, dispersed and only partial for each stakeholder. Besides, few policies are built on a consensus among stakeholders concerning its objectives and the institutional arrangements, the rules it implies. Hence, most forecasted effects of a policy are likely to diverge strongly from what really happens once the decision has been taken. Such a conclusion is quite disturbing since it implies that policies run a strong risk of failing to achieve their goals.

As stated in the previous chapter, the first step in the collaborative design of a policy concerns the definition of its objectives. In this domain, part of the difficulty lies in the fact that the objectives of the policy haven’t usually been clearly revealed, understood or accepted. Very often, stakeholders do not know what these objectives are; they only come across the means to achieve them or the consequences of these means. This strongly affects the possibility of positive interactions with the policy.

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“Rules are ineffectual unless the entities they affect know of their existence, accept that the rules will be used to monitor behaviours, and anticipate sanctions (formal and/or informal) to be applied for non-compliance” (Brinkerhoff, 1996a, p. 1505).

Development of the awareness on policy objectives is, thus, important, but a major difficulty remains concerning the process used for policy definition. Policy objectives definition has strong implications for the following phases but it is usually undertaken by the traditional decision makers only. They are not defined commonly with or agreed upon by all stakeholders. This strongly limits the possibility to achieve stakeholders’ acceptance of and commitment to these objectives.

Consultative definition of a policy objective

Whatever their nature, policies have an important institutional dimension and recognizing this dimension provides clues to improve their success. Obviously, building policies as public goods implies the development of new institutional arrangements for common decision. But even more conventional policies entail some institutional change. Institutional change can be the object of the policy objective itself, it can occur in the implementation process or within the adaptations to the new conditions the policy will induce. Successful institutional change is not easy to achieve. An efficient institutional change supposes to go through interactive and participatory processes of design and implementation (Baslé, 1997). Hence, successful policies require that objectives are defined in a collective way and agreed upon by all stakeholders.

This doesn’t mean that the sovereignty of the state (or the central authority) should be challenged. Transforming policy management into a meta-decision process doesn’t erase the fact that the state (or the central authority) is one of the rare actors with a legal mandate to promote actions and rules for the whole society and, therefore, has a major role to play.

In fact, the phase of definition of a policy objective should still begin with the “traditional” policy makers. In a first set of interviews, different policy makers should be questioned about the problems that they sense as important to solve through new policies or through the amendment of old ones. The aim, here, is not to develop a precise discussion on the means of action to solve the problem but on the problem itself as perceived by the policy makers. This definition of a topic by policy-making defines an area of enquiries: a set of regions concerned and an idea of the actors potentially concerned. This first step, thus, helps define a list of stakeholders (including local ones) and geographical boundaries.

In the second step, these stakeholders are interviewed to understand, from their point of view, which problems are important to solve and would require policy-making. This enables to test, at their level, the relevance of the topic definition carried out by policy makers. It also enables to enquire about the actors that would be concerned by a problem requiring policy-making and, thus, to improve the initial list provided by policy makers.

The third step aims at improving the initial definition of the policy topic established with policy makers. It is done by the analysts and scientists team and aims at making it fit with the various opinions registered during the different interviews. Usually, this can be achieved either by modifying the wording of the topic definition or by broadening it. Examples of such a process in Viet Nam and Indonesia can be found in Box 2 and Box 3.

Box 2.

Defining a policy objective, a case in Viet Nam

In the middle of 1998, a team from Cirad – Ecopol started to work together with the Ministry of Agriculture and Rural Development of Viet Nam (MARD) and the Viet Nam Agricultural Science Institute on agricultural policy-making for the Red River Delta, in the framework of the Ecopol project.

The first set of interviews with officials of the MARD Policy Department showed that, for this Ministry, the main problems were linked with the development of specific commodities. Among these commodities, pigs came first as a potentially interesting commodity, although it was facing a lot of difficulties in development. Pig exports had strongly decreased over the last 10 years with the collapse of the European socialist block with whom Viet Nam had strong commercial ties. Still, pig seemed to have a potential for development in Vietnamese farms: it is the first type of meat for consumption in the country and it can be developed on limited areas, which suits farmers since they have very limited land area (on average, a farm household cultivates 0.25 ha in the Red River Delta). Another concern of the MARD was the development of new forms of farmers' organizations. A new law had been passed setting a legal frame for farmers to group themselves on various objectives, but still little was known of the potential effect of the law on agricultural development.

A similar discussion was organized with scientists and policy analysts of the VASI. They focused more on problems related with diversification and specialization of farmers' activities. The common self-sufficient production system, based on rice cultivation and a few pigs and poultry raising (the former taking advantage of manure from the animals and the latter using products and by-products of cultivation), was not providing opportunities for development. The emergence of new production possibilities and the awakening of private market dynamics attracted farmers in developing new activities and in specializing in more market oriented production systems. However, risks were perceived as high and farmers ill-prepared to make diversification or specialization choices. Moreover, farmers were conducting their activities individually with no collective organization after the collapse of the socialist forms of co-operatives as collective means of production. This was particularly true for production selling. It appeared, thus, that the scientists' point of view in VASI considered that problems mainly concerned how farmers decided to produce and how production and marketing was organized at the local level.

Following this, interviews were conducted with local authorities in charge of agricultural development (at provincial, district and commune levels) and with farmers. Interviews with local authorities at the provincial and district levels showed the same type of opinions as those presented by the MARD, with a strong focus on specific commodities, particularly pig and rice production (these two commodities are produced by nearly all farmers in the Red River Delta). The problems perceived at the commune level, by local authorities and farmers were different. For them, farmers knew how to produce but faced problems in selling their product: unstable and unpredictable prices (especially difficult when production prices are low), difficulties to find buyers at certain times, lack of information on consumers' demands, etc.

From these different rounds of interviews, a common frame of perception emerged. After years of successful efforts aimed at producing more, the future of agriculture in Viet Nam now depended on the ability to produce and sell better. The problem was rendered even more acute by the collapse of collective structures: a planned organization of marketing and quality choice had suddenly been replaced by millions of farmers with individual uncoordinated choices. Problems, thus, were more on the marketing of products and its organization than on production itself.

Therefore, the analysts' team proposed the following topic to the different stakeholders: "Farmers' relation with the market, its impact on farmers' income and agricultural development". All accepted it, considering it was relevant and close to their perception of the current problems

Box 3.

Defining a policy objective, a case in Indonesia

The analysis of a pilot case study in Indonesia was included as part of the activities of the Ecopol project. Three individual consultation meetings were held. The first one took place at and with the Indonesian Agro-Socio-Economic Research Centre in Bogor (ICASERD). ICASERD agreed to take part in this work and helped to identify local potential partners in West Java province. These included the Assessment Institute for Agricultural Technology (BPTP), the West Java Bureau of Planning (BAPPEDA) and the Agricultural Services of West Java (KANWIL).

The next meeting was held with the BPTP. Several potential topics and related zones of interest for BPTP were discussed. The outcome was that decisions should be made together with ICASERD, BPTP, BAPPEDA and KANWIL on the possibility of having a joint effort between these institutions supported by the Ecopol project for training and research activities, and on a topic and location suitable for all parties.

The third meeting was held at the BAPPEDA's head office, in presence of the Head of the Economic Department and several staff from different departments. After a presentation of the methods and tools proposed, a discussion started on the priorities and needs at the provincial level. It was decided that a co-ordination meeting should be held with BAPPEDA, ICASERD, BPTP and KANWIL to set up a common decision. The purpose of this inter-institutional meeting was to discuss and select both the topic and location of the work.

This meeting was hosted by BAPPEDA. Participants were mostly those who had already attended the former consultation meetings. In a short presentation, the interests of the different parties, as expressed during the consultations, were presented and discussion started on the priority problems of the province and on the zones concerned. Since it was impossible for the participants to make a decision in a few hours, they decided to organize another meeting, one month later, with the same participants. Three main policy concerns were expressed as researchable topics: income improvement, business partnership, and commodity development.

Income improvement was raised by the participants because the ultimate goal of any policy, for them, was to raise household income and welfare (especially for poor households) and not only to increase agricultural production at any cost, as had often been the case in nationally defined production policies of the pre-decentralization era¹. It was an important shift in how the participants viewed policies. The second topic, business partnership, was referring to the establishment of institutional settings allowing farmers better access to, and more benefits from, market opportunities. Contract failure was stressed as an impediment to establishing efficient relationships between farmers and traders. The last topic, commodity development, related to critics of the production oriented agronomic approach that was missing the objective of increasing household income by a lack of an integrated view of the problems.

The ensuing discussion among participants helped to focus on a common question that defined the topic on which policy analysis should focus: Within the objective of the development of the provincial economy, how to increase and sustain poor farmers income, through commodity development and institutional improvement?

Then, the discussion centred on the implementation of this issue, both in terms of location and of teamwork. According to the agro-ecological zoning of West Java, three different environments coexist: the coastal area, in the north of the province, with dominant rice and marine activities; the central area, with mixed farming systems including important legume and vegetable crops development; and the southern part of the province, with animal husbandry and plantations. The final choice was to concentrate on the last one for two (...) reasons. First, it was still the poorest area in the province and therefore deserved a higher priority, and second, because there was far less information on its agricultural and socio-economic conditions.

All institutions assigned a few staff members to form the core group of analysts to participate and be trained in the proposed approach. Another group was made of higher-level representatives with the task of acting as a committee to review and to assist the development of activities. Finally, each partner committed itself to open or make available as far as possible their information, data reports and analyzes that were relevant for the topic and the selected area.

Several meetings and interviews were held at different levels to assess how far this topic reflected the concerns of various types of actors. Discussions with district and sub-district authorities showed some discrepancies: people working in agricultural services seemed to favour increases in production compared to increases in rural income, and representatives of local government offices considered that the main problems were related with their daily capacity to fulfil their duties, in particular, the lack of funds and the low level of skills and knowledge. However, it was found that problems expressed at the village level by farmers and local leaders were fully consistent with the topic defined at the provincial level.

The group of persons who had been consulted for the definition of a relevant topic for policy analysis seemed, thus, more aware about the conditions of rural households than some of the local authorities. This confirmed the coexistence of multiple perceptions of multiple stakeholders, and implied that more opportunities for interactions had to be provided among stakeholders for them to improve their mutual understanding.

¹ Since 1998, the Indonesian government has started to design and implement a decentralization process to give more discretion for public management to provincial and district authorities.

This preliminary phase may require repeating the consultation of step 1 (policy makers), step 2 and step 3 to reach a broadly accepted definition of the policy objective. Still, it may not provide a completely satisfactory definition of the relevant policy objective to be tackled. Actually, for policy makers concerned by the welfare of all their citizens, a specific policy objective is more like a means to achieve the ultimate goal of global welfare improvement. And the ability to define efficient means to achieve a broad objective relies on a good diagnosis of the situation, which is not always available. Therefore, the initial definition of a specific policy objective can be subject to change in the process leading to preparation and implementation of a policy.

The goal, in this preliminary phase of policy management, is not as much defining the most objectively precise and relevant topic as it is defining a topic on which most stakeholders will be interested. Gaining the interest of most stakeholders is a necessary condition for their interactive participation in the processes of policy definition and, further on, of policy implementation. It is also a way to get an informal legitimization by non-state stakeholders of a state intervention on the topic, and a certain legitimization by all actors of the analysts' teamwork. "National dialogue [is important] to develop consensus, or a shared understanding of the essence of the state. Out of this consensus should emerge a set of national shared values which in turn help define the country's core institutions and core functions" (Minogue, 1999, p. 165).

Although some crucial stakeholders have been listed while defining the objective of a policy, it is far from sufficient to identify all the stakeholders. In the Viet Nam example (Box 2), further discussions showed that marketing of agricultural products, essential to agricultural development, was mainly undertaken by private traders with almost no control from the state or the local authorities. This situation (which was a direct consequence of previous policies) came along with a lack of knowledge on market functioning and its actors. Private traders had just been identified as important stakeholders.

Identifying stakeholders for policy-making

Identifying stakeholders is considered a fundamental task by many policy analysts within the new institutionalism group: "stakeholders [need] to be identified" (Biggs and Smith, 1998, p. 240), "[strategic management] involves an assessment of (...) who the stakeholders are" (Morton, 1996, p. 1441). For them, identifying who are the actors who will participate, facilitate or hamper the implementation process is an important task. It helps design a strategy to ensure this implementation process can be carried out.

To build policies as common meta-decisions, stakeholder identification is crucial for the definition process as well as for the implementation process. Without knowledge of who should participate in policy definition and implementation, even interactive participation will not make sense. "Participatory methods per se cannot guarantee success" (Biggs and Smith, 1998, p. 240). Without knowledge on whose decisions can interact with a policy, building decision as public goods is not possible. Likewise, without good stakeholder identification, relevant information on the system will be missed, cannot be shared and may mislead the other actors' decisions. "Problem solving activities that do not mobilize the information and resources of the right set of actors may treat symptoms rather than causes or be frustrated by systematic forces that preserve the status quo" (Brown and Ashman, 1996, p. 1467).

Despite the importance of stakeholder identification, methods to practically identify them have seldom been proposed. Most tools, such as those used in stakeholder analysis, adopt a strategic management angle when stakeholder identification comes into question. They focus on how to identify who the important stakeholders are for the decision maker, so that he will be

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able to manage the situation accordingly. They do not look at who is concerned by the problem a policy is trying to improve, they try to assess who is potentially in favour or against the policy itself. This is done by presenting the positions of the different stakeholders regarding a reform using criteria such as policy support (Boiko *et al.*, 1996; Goldsmith, 1996), interests and resources (Brinkerhoff, 1991), potential impact on problems (Honadle and Cooper, 1989) or potential conflicts and leadership (Crosby, 1997), and presenting these positions using tables (Montgomery, 1996), elaborate typologies (Mitchell *et al.*, 1997), etc. These methods do not fit with the approach adopted here because they support the dominance of a specific stakeholders' viewpoint.

Besides, most existing stakeholder identification methods are subject to important potential errors. Usual errors in stakeholder identification are the omission of important actors, the inclusion of unnecessary ones and the definition of generic categories that actually contain different types of actors. A method is proposed hereafter to identify who the actors are while avoiding these three common pitfalls.

The first step of this method is the organization of interviews or, better, "brain-storming" sessions with national and local policy makers, scientists and analysts to define all the actors who have a direct or indirect role regarding the topic chosen as an objective for a future policy. This includes first, the policy makers and local authorities concerned by or deciding on the chosen policy objective at the different levels. Second, it includes the actors who would be directly or indirectly affected by a policy with this objective in view. And third, it includes the different actors, public agencies, private stakeholders or associations that would be concerned by the implementation of a policy with the objective previously determined.

These interviews and sessions provide the analysts' team with an extensive list of potential stakeholders. Gathering systematically the knowledge of national and local policy makers, scientists and analysts by this way may not be usual, but it is not very different from what is done by other analysts (Crosby, 1997; Grimble and Chan, 1995; Montgomery, 1996; Morton, 1996). The resulting list, though, should only be considered as a preliminary one. It is a first step in stakeholders' identification, which is not sufficient: the dangers of overlooking important actors, introducing unnecessary ones and defining too broad categories have not been completely avoided.

Avoiding important omissions, avoiding inclusion of non essential stakeholders

If the set of persons interviewed during the first step has been well chosen, it will obviously be difficult to find better informants with sufficient extensive knowledge. It seems clear that beside asking each type of stakeholder in the preliminary list on who they think should be included or excluded in the list, no simple way appears to find out if the list should be revised or not. And in fact, this is exactly what we suggest to do. However, it would not be very efficient to organize numerous contacts with the sole purpose of drawing up a better list. On the other hand, making this part of interviews that have a broader objective would give the opportunity to check its validity.

An institutional analysis method developed by Cirad Ecpol, the PACT2 method (Jésus, 2001), fits these requirements. In this method, interviews of the different stakeholders are set up to characterize their perceptions of a given situation, of the actions and interactions affected by or affecting this situation, of the possible evolutions of this situation and their consequences and of the possible strategies for a better future. Part of these interviews aims at making the stakeholders define who has, had, will have or should have an impact on the problem at stake. This type of information is exactly what is needed to check if some important actors related to a

² PACT stands for Pro-Active Conciliation Tool.

policy objective have been omitted (and therefore should be included) and if some actors, previously considered as important, have, in fact, only a negligible role (and therefore may be excluded). An illustration of this process is shown in Box 4 (see also Box 9 for more details on the interview method).

Box 4.

Using Institutional Analysis to validate stakeholder identification, an example in Viet Nam

With the commonly accepted policy objective presented in Box 2, a Vietnamese analyst team, assisted by the Cirad-Ecopol, defined with officials from the MARD, representatives of provincial and district authorities and researchers from the VASI an extensive list of stakeholders. This list included farmers, traders, officials from various ministries and government organizations, representatives of various agencies at provincial, district and commune levels, private companies, bank managers, extension services, etc.

The 180 actors interviewed were asked to describe which actors they considered to have an influence on the performance of the rice and pig commodity chains, which actors they were in contact with when participating in actions on the two commodity chains, which actors they thought would be affected by the potential evolution of these performances and which actors they considered as having a role to play to improve these performances in the future.

Compiling the interviews findings enabled to assess the importance of the different stakeholders' role in this system according to the perception of all types of stakeholders. It resulted in modifications of the list of stakeholders identified initially. It appeared, for instance, that seed production and animal breeding were important for the needed improvement of rice and pork quality and that district companies producing and disseminating new seeds and breeds had a key role in such a process. However, they were not on the list of stakeholders that had been defined previously. They were newly identified stakeholders to be included on the list.

Oppositely, the interviews revealed that non-essential actors had been included in the initial list. For instance, provincial officials in charge of the planning and investment service had been regarded as important players of the policy implementation process. The interviews showed that they mostly applied decisions made at the government or ministry level under the control of the head of the provincial people's committee. No actor referred to them as having a role in influencing the performance of the rice and pork commodity chains. Therefore, it was decided not to define them as a specific type of stakeholder.

Detailing too generic categories of stakeholders

As stated in Chapter I (Participatory generation of information ..., p. 12), beneficiaries, target groups, and intermediaries are also decision makers, in the sense that, through their actions, they will, or will not, make the policy measures operate effectively. However, very often, they are not well identified.

Usually, these types of stakeholders include many different people who are grouped under a generic term that hides a great heterogeneity. Examples of broad and somehow confusing names such as "the poor", "rice growers", "women", or "rural households" can often be found in the literature. Due to their number and this heterogeneity, these stakeholders are difficult to identify and to take into consideration in the policy analysis process, to say nothing of their participation in the policy formulation process. But using generic categories reduce a great diversity to a stereotyped individual with average characteristics that do not reflect the real situation. Gaining a deeper knowledge of who these actors are is therefore, an important task in a policy definition approach that seeks inclusion of stakeholders since the formulation process phase. Actually, inadequate beneficiary identification may result in several problems: interests of the corresponding sub-groups are overlooked, potential valuable inputs for decision-making are ignored, unpredictable opposition arises hampering partial or total implementation, conflicts develop, and expected results are not reached.

Various survey methods have been developed to better characterize the existing diversity of situations among actors grouped under a generic name (Bourgeois, 1988; Hebinck and Ruben, 1996; Jésus, and Thê Anh, 1993). They usually consist of a thorough investigation of reality, with detailed interviews of a significant number of actors of a given broad category and

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subsequent data analysis and statistical treatment to define and characterize several homogeneous sub-categories.

These methods are very successful but often face two difficulties: first, the surveyed population often shows a pluri-modal distribution, which implies that common statistical sampling methods can not be applied without pre-existing knowledge for stratification and, second, the survey and data analysis process is rather time consuming. Pre-existing databases on actors' characteristics can make the use of such methods quicker. However, the definition of sub-categories is, most of the time, dependant on criteria directly related to a specific objective (in our case: the policy objective identified with stakeholders) and, therefore, an existing database may not include the information necessary for a classification with new objectives. For instance, a database containing information on the income level of farmers (as in (State Planning Committee - General Statistical Office, 1994) or (Jésus and Thê Anh, 1997)) will probably not contain sufficient information to differentiate farmers on their relation with the rice market (Table 9) and, therefore, collecting this information will still be necessary.

To overcome these difficulties, Cirad-Ecopol has developed tools for rapid, interactive and participatory definition and characterization of categories of stakeholders that are too broad or too generic:

- a Participatory Rapid ACtor Typology method (PRACTYP),
- and a method to identify and characterize traders within a commodity chain³.

Both tools share a common frame of organization. A set of actors is selected for their knowledge on the studied situation, on the actors to be differentiated, and they are convened to a meeting lasting one or two days. The meeting follows a clear pre-determined methodological organization within which the different participants, considered as experts (experts on a specific situation because of their knowledge and not because of a specific title or diploma), are invited to generate consensual information by sharing their knowledge in a participatory mode. Both tools are classified in the common appellation of "expert meetings".

Participatory Rapid ACtor Typology method

Box 5.

An expert meeting-based typology of poor agricultural households in West Java, Indonesia

In the absence of recent and thorough household data related to the topic defined with stakeholders in the study area chosen for policy analysis in West Java (Box 3), it was decided to use the expert meeting method (Bourgeois, 2000) to identify dominant types of poor agricultural households in southwest Java.

Prior to the meeting, a list of possible participants was set up based on the indications given by the analysts, researchers and provincial policy makers (Box 3, "Defining a policy objective, a case in Indonesia", p. 18). The list reflected a multi-institutional and disciplinary background, and offered a wide range of people to be selected. Among them, eleven were selected through team discussion (10 actually participated) both for their expertise (knowledge of the situation of the agricultural households in the various districts included in the analysis and knowledge of poverty problems in the region), for their time availability, and for their aptitude and openness to participate in a collective exercise. Altogether, their expertise covered almost the whole diversity of the region under study. Moreover, some had good knowledge of development and poverty problems at the field level, while others were more familiar with development and poverty problems at government or provincial levels.

Two main outcomes were expected from this expert meeting. The first expected outcome was a list of criteria, which, according to the participants, could be used to build a typology of poor agricultural households in the area. The second was the typology itself, based on a combination of the main criteria after prioritization, including an indication of the relative weight of each category.

³ A commodity chain encompass "all the activities that are closely interlocked and vertically linked by one product (or very similar ones)" (Montihaud, 1992). It is a system including all activities directly linked with a given product from production to consumption (i.e. including trading, processing, distribution, etc.).

In all cases where expert meetings have been set up, their organization followed a specific and common methodological path whose technical content will be presented below. The details on how to make these meetings successful in terms of stakeholder participation will be found in Chapter IV.

Introduction

The meeting starts with the resource person presenting the objective, what is expected, what it will be used for and the reason why the participants were selected, insisting on the importance of their knowledge of the real situation. This is followed by a short self-introduction of each participant. Then the organization of the session is briefly presented, including the work agenda. The resource person explains also that the decision to go ahead with the work agenda must be taken after a consensus among participants. The participants themselves are asked to define the rules for establishing the consensus (when and how): for instance unanimity, 2/3 majority, simple majority. In the case of West Java they decided to use a simple majority rule.

Definition of the system limits and targeted population to be classified

These limits are defined by the type of project or programme, by the policy objectives, by the geographical space of implementation, and the duration of the activities. The idea is that the participants understand well the scope and the scale of the system in which stakeholders must be identified. In the case of West Java, it was the population of poor rural households. Therefore, some urban districts were excluded from the system.

Criteria identification

In this second step, the objective is to establish a list of criteria enabling differentiation of categories within the generic type of stakeholder, in our example: the poor rural households. The criteria to be identified should answer the question “What are the main characteristics of the rural poor households that make them significantly different and that might have implications in defining rural development policies targeting them?”.

An important point is that, for each criterion, it has to be possible to define mutually exclusive categories. For instance, land tenure may define three categories: landless, tenant, and owner. But, a criterion such as « credit » can usually only define two categories: ‘yes’ and ‘no’. In the ‘yes’ category, there can be different types of credit that are not mutually exclusive. Therefore, ‘type of credit’ cannot usually be a main criterion, only an additional criterion (next step).

In order to bolster equal participation among the participants, the process of criteria identification is based on visualization techniques. The participants receive cards on which they write the criteria they consider important, with one criterion per card. Cards are then collected and displayed on a wall or magnetic board. Redundant cards that contain almost exactly the same meaning are immediately removed. Then cards are first grouped together by broad categories and progressively removed after discussion if they cover the same concept or criteria, even with different words. In this process careful attention is paid to reaching a consensus between the participants on the elimination or retention of each card, asking the author, when necessary, to explain what was meant. At this stage there is no discussion on criteria relevance.

Criteria discussion and ranking

After consensus has been reached on which cards to keep, the next move is to discuss the relevance of the criteria, keeping in mind that for each criterion it must be possible to clearly name a variable with mutually exclusive values. “Size of land owned” for instance is acceptable only if there is a consensus on the different sizes that are relevant for making significantly

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different categories as regard the objectives. “Information” is not acceptable if no corresponding variable characterizing stakeholders can be identified. This issue may have been noted on a card because some people think that without information there would be little possibility for a new policy to be successful. However, if “information” does not specify a difference between different types of farmers, it should not be included in the criteria list. “Information” may be a problem, but it is not a criterion for a typology.

Experience shows that many problems are expressed as classification criteria by the participants in this discussion. These must be discarded from the typology making process in a consensual way, but they should be kept for the further consideration as useful by-products of this method. Any irrelevant criterion is removed after agreement.

Following this phase, a hierarchy of the different criteria is established by using ranking (or scoring) by the participants. The ranking is based on the perception each participant has about which criteria are the most important in sorting out the system of actors into different homogeneous groups. The applied scoring method consists of giving to each participant the same list of criteria, letting them think individually about which criteria are better to separate the system into homogeneous groups, and then ranking these criteria accordingly. For each criterion, the extreme lower and upper scores among all participants are eliminated before final calculation in order to limit biases due to voluntary over- or underrating. Participants use again individual cards where they write down their own ranking. Cards are gathered and the results directly written in a table, on a flip chart or whiteboard. The more important the criterion, the higher the score. A common list is made by aggregate ranking as shown below (Table 2). The top three to four criteria, called principal criteria, are used for cross-criteria grouping. The additional criteria are kept aside to help further describe the categories.

Table 2. Criteria ranking for a typology of poor agricultural households in West Java, Indonesia

Criterion	Ranking by participants (one participant per column)										Total
Education level*		23	19		23	22	20	22	21	21	171
Size of land owned*		16	23	20	19	23	21	18	22		162
Transport infrastructure and facilities**		20	18	22	16	20	17		17	20	150
Status of cultivated land*	19			19	18	12	14	17	15	22	136
Soil fertility**	11	18			17	18	19	16	18	19	136
Transfer of information**		14	15	9	21	14	13	21		16	123
Mental attitude*	16		10	13	22	19	8	11		18	117
Availability of labour force**	20		13	16	6	15	23		12	6	111
Status: farm/fishing worker*		7	22	11	20	7		9	19	10	105
Cultivation system*	9		17		12	8	12	13	16	9	96
Availability of inputs**	6	17			15	5	16		7	14	95
Availability and access to capital**	5	15			18	7	17	10		13	92
Time and family labour allocation*	18	10	8	17	10	18	5			4	90
Topography/slope**		13	16	17	13	10		8	9	8	87
Predominance of dry land**	7		9	5	8	13	11	19		14	86
Population growth**		4	4	3	14		18	12	10	17	82
Migration of productive labour force	14	8	6	14	11			6	6	12	77
Natural disasters**	13	11	2	4	9	4	15		5		63
Development institutions**	4	12	11	6	3	11		4	11		62
System of social relationships**	8	3	3	12			6	7	10		60
Unutilized land**	12	9	5		4	9	9		7	3	58
Role of women*	1	1			8	1	5	1	2		24
Predominance of formal leadership**		2		2	2	2	4	3	4	2	21

* Indicates that the criterion relates to the household characteristics.

** Indicates that the criterion is more linked to the household environment.

Shaded cells contain extreme scores that have been cancelled.

Cross-criteria grouping

The typology table is then built starting with the first top criterion and the categories it delimits in the population (first line of Table 3). Then the second criterion is crossed with the categories defined by the first, so that new sub-categories are established or existing categories maintained (second line of Table 3).

Table 3. Expert meeting-based typology of poor agricultural households of West Java, Indonesia

Education	< Primary School (SD)			< Secondary School				Secondary School
Land cultivated	0 – 0.2 ha		0.2 – 0.5 ha	0 – 0.2 ha		0.2 – 0.5 ha		>0.5 ha
Land status	1. Landless	2. Tenant/ renter	3. Owner tenant	4. Renter	5. Owner tenant	6. Owner tenant	7. Owner	Owner
Estimated share of total poor population	55%	10%	5%	5%	10%	5%	5%	Not poor

It may happen that the next criterion might not be the most relevant for the categories defined by the preceding criterion. It would then be necessary to proceed to a re-ranking of the criteria for these categories. For example, if “land tenure” has three categories: landless, owner and tenant, and if “variety planted” is the next-rank criterion, the latter is not relevant in relation with the landless category and a re-ranking would be necessary for the sub-population of landless stakeholders.

Typology discussion

Results are revised to check the relevance of the categories obtained in relation to the real situation (for instance, some categories may not exist or may be of little importance; in that case they might be discarded from the pre-typology after cautious examination). Then the results are summarized in the final table.

Typology refinement and final agreement

Each category can be further detailed using the additional criteria as descriptors in order to obtain the maximum information about each category. One proceeds also to make some estimates for each category about the number (and percentage) of people and the economic importance of their activities. These estimates are based on the knowledge of the participants and discussed so that there is an agreement on the final result. In this case these were indicators of the relative importance of the different categories with regard to the total population of poor households (line four in Table 3).

Expert meetings for the identification and characterization of traders within a commodity chain

As for the previous expert meeting method, choosing the right set of persons to be invited is crucial to the success of the operation. These persons should represent different views on the commodity chain but should not be too numerous to allow for intensive participation. They should all have a good knowledge of the chosen commodity chain and of the actors of this chain and they should be open to discussion.

Box 6.

Selecting participants for an expert meeting on the rice commodity chain in northern Viet Nam

Since 1989, the trade of agricultural products has been in the hands of individual private traders with little intervention from the state. Consequently, most policy makers and government officials have little control and little knowledge on their activities especially at the higher levels. The actors who knew sufficiently well the situation of commodity chains were either actors directly involved in it or local actors. Local commune or district authorities, for instance, had regular contact with private traders and had, thus, some interesting knowledge on them. Therefore, for the expert meeting it was decided to invite a selection of farmers, traders at different levels of the marketing channels and district officials in charge of market management.

Since little knowledge was available on the different types of traders, one or two days were spent in discussion with farmers, local rice traders, processors and retailers to get a rough idea of the different representatives of the marketing channels that had to be invited. The final meeting gathered:

- Farmers,
- Rice and paddy collectors,
- Rice and paddy wholesalers,
- Rice/paddy millers,
- State owned rice company,
- District officials,
- Rice retailers.

In this meeting, all actors were from the local level (district and below). To take into consideration the stages of the commodity chain that went beyond this local level, complementary information on interregional and urban traders was to be added later on.

The first step in such a meeting, like in the previous method, is to explain its objective and the procedure that will be followed to the participants, and to present the commodity that is concerned. The interactive process of participation and of consensus reaching should also be clarified.

The second step aims at describing what happens to the commodity from the time it is produced to the time it is consumed. Generally a commodity is produced, then traded, often goes through processing and is distributed to consumers. The aim here is to detail the technical steps of each of these activities and to define, for each step, the kind of product that comes out.

To achieve this, the different participants are given colour cards on which they are asked to describe the activities occurring within the commodity chain and the different technical steps of each activity. The cards are then collected, read aloud and attached to a board one by one. If the definition of activities and technical steps vary from one participant to another a discussion occurs. Participants are invited to explain if the differences relate to different wordings of the same idea, to the existence of additional activities or technical steps unknown by others or to different views. For each of these points an agreement among all participants is sought. Then, the organizers of the meeting draw up a table presenting the different activities and technical steps as described by the participants. This can be done on a board or using an overhead projector (Table 4 for an example of results). For each technical step, they are asked to state the product that comes out. This information will be included in a third column to be added to the table.

Table 4. Example of activities and technical steps for the pork commodity chain in northern Viet Nam

Activity	Technical steps	Product
Pig production	Piglet buying Fattening Selling	Piglet Live pig Live pig
Slaughtering	Pig collection Transportation Slaughtering Carcass and offal selling	Live pig Live pig Carcass and offal Carcass and offal
Pig trading	Pig buying Transportation Pig selling	Live pig Live pig Live pig
Meat trading	Carcass buying Transportation Gross carving Carcass, cut carcass selling	Carcass Carcass Cut carcass Carcass, cut carcass
Distribution	Carcass, cut carcass, offal buying Transportation Carving Retailing	Carcass, cut carcass, offal Carcass, cut carcass, offal Meat pieces Meat pieces
Meat processing	Meat buying Transportation Processing	Meat pieces Meat pieces Processed meat

In the third step, the participants are given colour cards and asked to list the actors involved in the different activities and technical steps that have been defined. The process of information collection, presentation and consensus building is the same as for step 2. It results in a table presenting the activities of each actor as shown in Table 5.

With these first three steps, actors of the chosen commodity can be identified and partly characterized. The following steps will aim at better characterizing the links between these different actors and their importance, but will also provide an opportunity to check on the possible omission of actors.

In the fourth step, relations between each actor in the different marketing channels of the chosen commodity chain are described. This is done stage by stage. The relation between farmers (i.e. producers) and the actors who buy directly from them is tackled first. Then the relations between these buyers and the actors they sell to is described. This process is continued to the next stage and further on until the relation with consumers has been tackled or until the participants do not have any more information to provide.

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Table 5. Activities of the main actors in the commodity chain of pork in Hoai Duc district, Ha Tay province

Actors	Farmers	Slaughterer		Collector	Informer	Processor	Retailer	Local buyer retailing to Hanoi	Slaughterer retailing to Hanoi	Offal processor
		Wholesaling	Retailing							
Technical steps										
1. Raising pig	Yes									
2. Selling live pig	Yes			Yes						
3. Buying live pig				Yes						
4. Slaughtering		Yes	Yes						Yes	
5. Buying carcass		Yes ¹	Yes ¹						Yes ¹	
6. Selling carcass	Yes ¹	Yes								
7. Selling meat		Yes					Yes	Yes	Yes	
8. Processing meat						Yes				
9. Buying meat			Yes ²			Yes	Yes	Yes		
10. Transportation		Yes	Yes			Yes	Yes	Yes	Yes	
11. Selling information					Yes					
12. Carving meat			Yes							
13. Buying offal										Yes

¹ In the district of Hoai Duc, farmers generally sell their pigs once slaughtered i.e. the slaughterer kills the animal first and then pays for the animal with a price based on the carcass weight, not on the live weight. When pigs are sold to collectors they are sold alive to be brought and sold again in another province by the collector.

² Slaughterer-retailers generally buy pigs from farmers but also buy cut up meat from wholesaling slaughterers.

For each stage, all participants are given a prepared form to fill in as presented in Table 6. The first form presents the different types of producers⁴ in the first column (filled in by the organizers). The participants are asked to put the name of the actors buying directly from the producers in the second line. They are also requested to estimate the importance of the volume bought by each buyer over the total production of each type of producer (as a percentage) along with some other descriptive information for each transaction (type of product traded and place where transaction takes place). Then, the forms are collected, read aloud and consensus is sought, the same way as for step 2. A results table is built on a board or with an overhead projector (Table 7 for an example of results on the first stage of transactions in the pig commodity chain).

⁴ The use of the first method of expert meeting, presented above, on producers would provide information on the main types of producers for this step.

Table 6. Form for step 4

Categories of producers	Item	Categories of buyers				
		Buyer A:	Buyer B:	Buyer C:	Buyer D:
Category 1 ...	Estimated volume					
	Quality					
	Relation					
Category 2 ...	Estimated volume					
	Quality					
	Relation					
Category... ...	Estimated volume					
	Quality					
	Relation					
Category n ...	Estimated volume					
	Quality					
	Relation					

Table 7. First stage of transactions in the pig commodity chain of Hoai Duc

Sellers	Buyers	Slaughterer		Collector	Slaughterer selling to Hanoi
		Wholesaler	Retailer		
Farmers raising pigs ⁵	<i>Estimated quantity</i>	24%	56%	10%	10%
	<i>Product</i>	Pigs all types	Pigs all types	Big pigs	Lean pigs
	<i>Place of transaction</i>	Farmer's house	Farmer's house	Informer's house	Farmer's house

Source: Expert-meeting conducted by the Ecopol project in northern Viet Nam in 1999.

For the description of the second stage, the participants are given a new form to fill in. This new form is similar to the first one except that the buyers of the first stage become the sellers of the second stage. The meeting then proceeds as for the first stage and provides results as presented in Table 8. The same is done for the third stage and so on until all transactions have been described, down to the last transactions with consumers or until the participants do not have any more information to provide.

Table 8. Second stage of transactions in the pig commodity chain of Hoai Duc

Sellers	Buyers	Retailer	Consumers	Retailer selling in Hanoi	Processor
Slaughterer wholesaler	<i>Estimated quantity</i>	20%	10%	60%	10%
	<i>Product</i>	Ribs, legs, fat	Front legs, offal	All parts	Back legs, offal
	<i>Place of transaction</i>	Local market	Local market	Local market	Local market
Slaughterer retailer	<i>Estimated quantity</i>		90%		10%
	<i>Product</i>		All parts		Back legs
	<i>Place of transaction</i>		Local market		Local market
Collector	<i>Estimated quantity</i>	n.a.	n.a.	n.a.	n.a.
	<i>Product</i>	n.a.	n.a.	n.a.	n.a.
	<i>Place of transaction</i>	n.a.	n.a.	n.a.	n.a.
Slaughterer selling in Hanoi	<i>Estimated quantity</i>		100%		
	<i>Product</i>		All parts		
	<i>Place of transaction</i>		Local market		

Source: Expert-meeting conducted by the Ecopol project in northern Viet Nam in 1999.

⁵ In this example only one type of producer is considered. This is not always the case; different types of farmers will often take part in different types of marketing circuits (Bourgeois and Herrera, 2000).

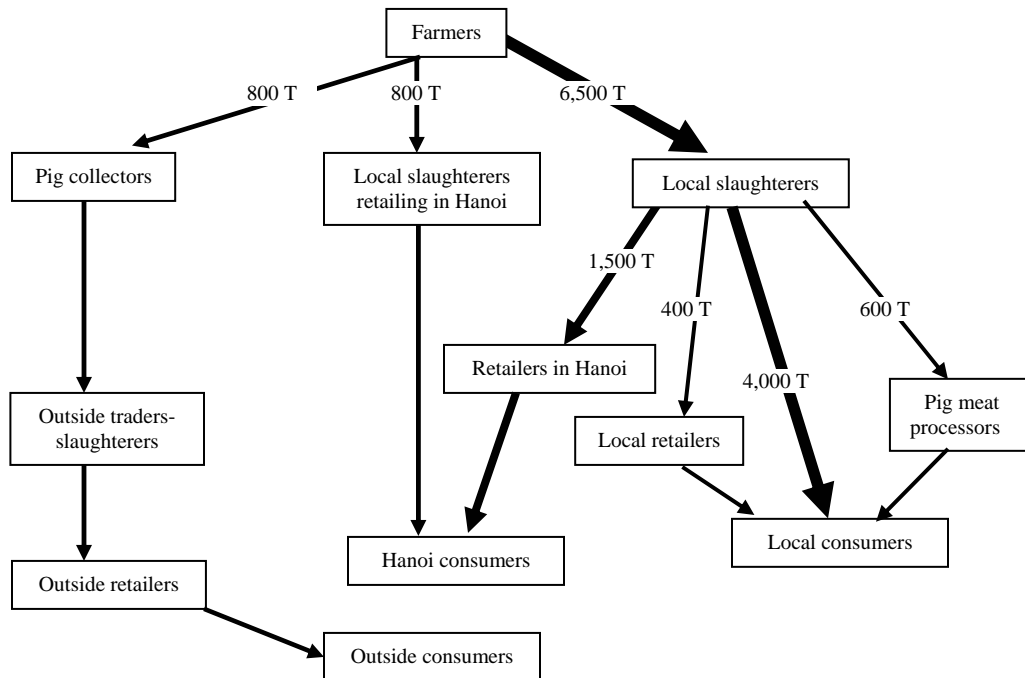
Once all the tables have been filled in, the results are summarized in a diagram presenting the different flows as estimated by the participants (Figure 3 as an example).

The description of each stage and the final agreement on the summary diagram provide possibilities for the different participants to check the accuracy of their previous statements. It enables them to verify whether the initial distinction they made among the defined stakeholders is reflecting reality or not, whether a type of actor has been omitted or not, etc.

The whole process has proved to be a rapid method to help identify the different types of actors grouped under the generic appellation of “traders”. It can be achieved in one day. This expert meeting method has been used in Viet Nam to describe the rice and pig commodity chains in different places. It has proved easy to handle and surveys organized later showed that the information gathered reflected reality with good accuracy. Moreover, it provides much more than just an accurate identification of stakeholders within a commodity chain. Results on the commodity chain steps, activities, products and flows complement the information supplied on stakeholders.

However, the outputs should not be considered as precise computations of a real situation. They are estimates that roughly describe reality thanks to the expertise of stakeholders. More precise results can be achieved through intensive surveys provided more time is available.

Figure 3. The pig commodity chain in Hoai Duc district (Ha Tay province)



Remarks:

- All quantities are expressed in tons of equivalent live pig.
- Assemblers, slaughterers and outside traders-slaughterers only buy live pigs.
- All retailers buy carcass pieces and sell fresh carved meat.
- Consumers buy fresh carved meat.

Distribution of pig production		Employment provided by each activity	
Total pig production	8,000	Total number of households	40,000
<i>Sold by farmers</i>	8,000	... involved in producing pig	34,000
Sold outside the province	3,100	... working as local slaughterers	400
Processed	600	... working as meat processors	60
Consumed locally	4,400	... working as retailers	200
		... working as pig collectors	20

Source: Expert-meeting conducted in northern Viet Nam and data collected at district level by the Ecolpol project (1999).

In this chapter, we have shown how a policy objective can be defined and how stakeholders can be identified in order to facilitate the collaborative design and implementation of a public decision. Within the whole approach proposed in this book, it corresponds to a stage where we know on which problem actions should be taken and who should be involved in their definition and execution. To involve stakeholders and to help them focus on the domains where actions are really needed and possible, it is now necessary to identify what is important for each of them: what is at stake for them.

Chapter III

Multiple Stakes, Multiple Actors: Identifying What is at Stake for the Different Actors and for the System

The previous chapter presented methods to identify all the actors potentially concerned by a policy, whether they can influence its implementation or not, while supporting their early involvement in the policy definition process. Obtaining further involvement and commitment of the different stakeholders with various interests necessitates a good assessment of what is at stake for them and for the system in general. This chapter will present methods and tools to achieve this task.

A policy reform generally involves and affects a great number of diverse actors, influences many sectors and modifies a lot of situations and problems. “The nature of policy changes is that it cuts across sectors and interests” (Crosby, 1996, p. 1403). This property of policy change makes it a powerful tool, but also a very delicate one to master since policy failure can occur when the interests of stakeholders are challenged (Biggs and Smith, 1998).

As stated in Chapter I, strategic management tools have been proposed to limit these risks. Several analysts consider that these tools are necessary to ensure successful reforms (Biggs and Smith, 1998; Crosby, 1997; Grimble and Chan, 1995; Morton, 1996). However, their concern is more to give policy makers a stronger leverage to have a reform properly executed. Strategic management tools are designed to be used once a policy has already been defined. They aim at improving the insight of the policy makers on what is at stake for the implementation of the policy and on who are the stakeholders who can help or hamper this process.

“[Strategic management] involves an assessment of the environment, awareness of what is at stake and who the stakeholders are, and adapting actions so that winners will find their roles maximized, while losers are neutralized or co-opted as much as possible” (Morton, 1996, p. 1441).

With these tools, policies can probably be implemented in a more effective way, but this does not mean they will produce the results they were expected to achieve. During and after the implementation process, opposing stakeholders, stakeholders whose co-optation has been struggled for and actors insufficiently powerful to be considered as stakeholders can still react in ways that can twist the outcomes towards undesirable effects.

Avoiding this and ensuring the success of a policy, both concerning its implementation and its effects, depend on the ability to devise policies and means to achieve them on which stakeholders can agree (Atkinson, 1990; Brinkerhoff, 1996b). Conflicts that have to be avoided may concern the objectives of a reform and they can also concern the means to achieve such objectives. Once the objectives of a policy have been chosen in a way that maximize the consensus among stakeholders (Chapter II), the next step is to design an implementation process on which they can also all commit and participate. “Instead of identifying ideal solutions a priori, policy implementers need to iteratively develop ‘second- or third-best’ answers that stakeholders can agree on over the life of the reform” (Brinkerhoff, 1996b, p. 1395).

To do so, having stakeholders directly participate in the design of the implementation process can guarantee a high level of success, but two main difficulties need to be overcome.

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First, the participation of all stakeholders is itself a source of potential problems. To reach a consensus on the design of a set of actions in order to reach an agreed objective, actors have to share the same understanding of the situation. If it is not the case, the different views will only compete and oppose each other, and it will be impossible to come up with an acceptable combination. Moreover, in many cases, actors misunderstand and misinterpret the positions of the others, and this can lead to conflicts that further hinder the collective construction of a set of actions. Second, having stakeholders participate in the collective design of a policy application does not erase the possible errors of diagnosis of the situation. If all stakeholders agree on a design that is based on insufficient knowledge or on a wrong diagnosis, there is a strong risk of facing policy failure in the end.

Overcoming these two difficulties implies information generation and information sharing. Stakeholders need two types of information and knowledge. They need sufficient information and knowledge to make a correct diagnosis of the situation they are in. This relates to understanding the technical and economic stakes in the system. Besides, they also need sufficient information and knowledge to realize how the other stakeholders perceive the situation¹. This relates to understanding the socio-institutional stakes in their system. Moreover, they need to share this information to build a common vision of their system and of what can be done in it.

The point related to stakeholders' perceptions, though rarely considered in policy definition, is a very important one. Most of the time, actors take decisions that are coherent with their objectives and the means at their disposal, given their actual understanding of the situation. As Ostrom stated: "[We assume that] individuals (...) are intendedly rational decision makers trying to generate benefits in a given situation" (Ostrom *et al.*, 1993, p. 9). The way actors perceive the potential gains and losses of a future situation is key to how they derive their decisions regarding this situation. And, thus, it is also key to their decision to participate in the crafting of common decisions and implementation processes. Therefore, it is crucial to identify and understand the different actors' perceptions, in order to promote the involvement of stakeholders in common decision processes or reforms.

The present chapter deals with the generation of information and the identification of stakes. After an initial introduction on the different types of stakes, a second part examines the stakes related to a technical or economic diagnosis of a given situation and a third part looks into the stakes related to actors' perceptions and actors' relations. The issue of sharing information will be dealt with in Chapter IV.

Identifying what is at stake

A stake is, by definition, "the amount of money which you risk on the result of something (...). In an activity (...), the stakes are the reward for the person who (...) succeeds in it" (Cambridge University, 2000). In this document, it refers to what an actor might gain or lose in an activity.

With this definition, what is at stake for each actor in a reform process can be different. Each stakeholder, as an intendedly rational decision maker, is looking at his potential gains and losses to make his decisions. However, what is determinant for the stakeholder, here, is his perception of the potential gains and losses. These can be very different from the "real" potential gains and losses: those estimated through an objective appraisal of reality with access to complete information. Hence, two kinds of stakes should be distinguished: those perceived by

¹ Not only what is at stake for policy makers as in strategic management tools.

stakeholders (and which might mislead their decisions) and those revealed by a more objective inquiry of reality (Box 7 and Box 8).

Box 7.

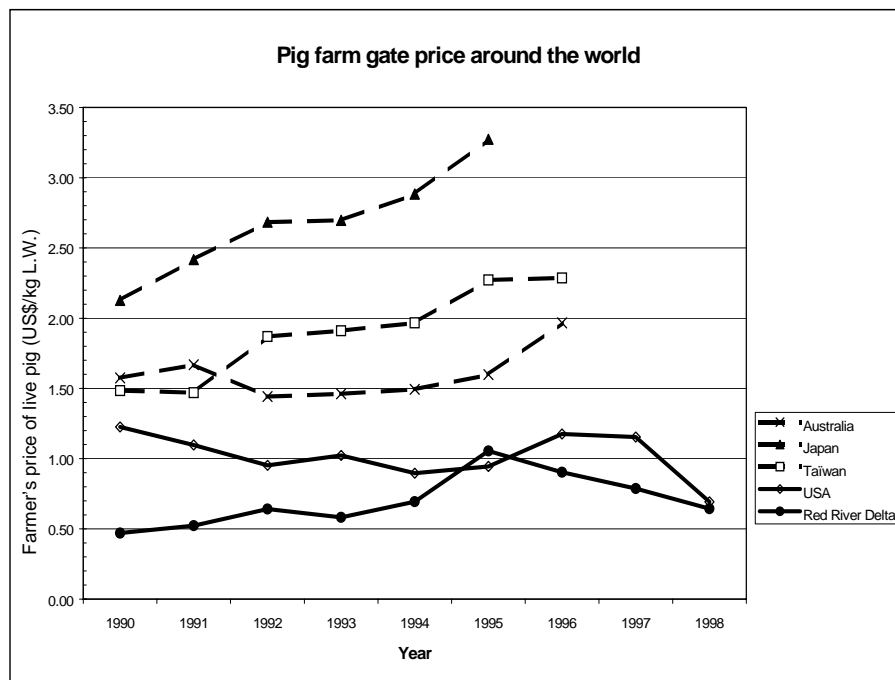
Perceptions of reality for the pig commodity chain in northern Viet Nam

In the case of the pig commodity chain in northern Viet Nam, policy makers had the perception that pigs produced nationally were more expensive than in other countries of the world (especially compared to the USA) and that this was hampering exportations. This led to a pessimistic view of the commodity chain development potential since production costs were known to be high and farmers already had problems making a profit out of pig raising. In reality, the situation was quite different (Jésus, 2000): the farm gate price of pigs in Viet Nam was lower than the farm gate price of other countries, the USA included (Figure 4).

Stakeholders at the local level (different types of farmers, traders and officials) had faced the fact that pig raising would not produce a lot of benefits with the current price of pig and the current costs of feeds. They considered that, for production to be able to develop, exportation should be increased. This would lead to higher benefits through price increases and to opportunities for quality improvement.

Inquiries proved that exportations could not develop without a sustained improvement of pig production quality first (Jésus, 2000). Formerly, pork had been exported to Eastern European countries and the ex-USSR captive markets. These markets had thinned dramatically and were now opened to Western European countries. Other international market opportunities existed but demanded high quality standards that Vietnamese pork production could not currently meet in terms of fat content and food safety (Trong Binh, 1995). Quality had to be improved first before exportation could occur.

Figure 4.



Source: USDA data, original data from the Programme Fleuve Rouge project (Groupe de Recherche et d'Echanges Technologiques [GRET] and VASI) recomputed by the authors and surveys conducted in the Red River Delta by the authors and the team of Vietnamese scientists from VASI (1998-1999).

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Box 8.

Perception of development constraints at different levels in West Java province, Indonesia

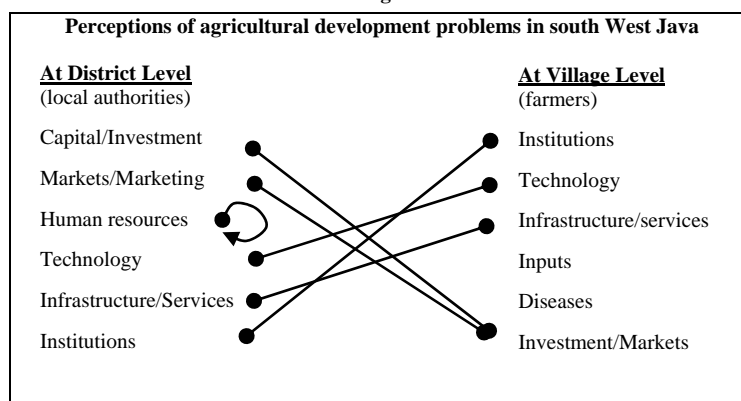
In order to identify the perception of the main obstacles to development in rural areas, group interviews were conducted in the southern part of West Java province, at district, sub-district and village levels. At district and sub-district levels, interviews were conducted with local authorities in charge of policy planning. The same exercise was carried out at the village level with the participation of the farmers themselves. The main results are presented below.

Very little difference appeared between district and sub-district authorities' perceptions of development problems. Both systematically ranked the lack of financial resources as the main problem, closely followed by market related problems and human resources development understood as farmers' lack of knowledge and skills. Technological, infrastructural and institutional related problems were far behind these three.

For farmers, the perception turned out to be quite the reverse (Figure 5). Institutions took the lead, with technology and infrastructure well before any other points. By institutions, farmers were indicating mainly the problems related to the functioning of co-operatives and farmers' groups and expressed their need for new forms of association to facilitate access to market and a better functioning of the local institutions. The lack of suitable technology was also highlighted, while at the district level this was not considered a problem, the emphasis being more on farmers' lack of skills. Infrastructure related to the poor state of roads and communication was mentioned due to the fact that some village study areas were quite far from the districts' main cities.

This case shows how perceptions can easily diverge and make the real assessment of a policy development problem difficult to undertake without the presence and inclusion of the different stakeholders' points of view.

Figure 5.



Stakes that can be identified through a technico-economic inquiry of reality

This type of stake can be identified by studying the technical and economic aspects of production systems, actors' situations, transactions, etc. This can be achieved using various inquiry tools. Searching secondary data sources can help investigate situations at global levels (local, national or regional aggregates, means, etc.) and often allow comparisons between different locations. The organization of expert meetings can quickly provide available information on actors' situations within large groups or on the functioning of specific commodity chains (Detailing too generic categories ..., p. 21 and Bourgeois, 2001). And technico-economic surveys of a sample of various types of actors can produce detailed information on the situation of individuals².

These different forms of investigation deal mainly with "objective" quantitative information. They help identify stakes at individual levels (for instance: stakes for the farmers,

² It is interesting to note that an expert meeting (EM) organized first can facilitate the organization of field surveys: stratified samples can be organized using actors' classification from an EM and questionnaire content can be more focused on the crucial problems that have been identified previously within an EM.

stakes for consumers, stakes for traders, etc.) but also at the level of larger systems: at the level of a village, a region, a commodity chain, a nation, etc.

As stated above, stakeholders may still be unaware of the existence of the potential gains and losses that can be revealed this way. Similarly, if a stakeholder has already perceived their importance, the information may not be available to all of them. This, again, rules in favour of generating and of sharing information among stakeholders.

Stakes as they are perceived by the stakeholders

Various studies have shown that the way reality is perceived by an actor is determinant for his decisions and actions. It affects the consumption choices of individuals (Adesina and Baidu-Forson, 1995; Jones, 1989; Lin and Milon, 1993), the technical choices of farmers (Adesina and Baidu-Forson, 1995; Feather and Amacher, 1994; Negatu and Parikh, 1999; Wossink *et al.*, 1996), the citizens' willingness to pay for environmental protection (Johnston *et al.*, 2000; Sukharomana and Supalla, 1998) and we can assume it affects all other types of stakeholders.

An objective appraisal of what is at stake through quantitative technical or economic information is not sufficient to understand how and why the different stakeholders make their choices and design their strategies. The information available to actors is far from complete, and the resulting bounded perceptions often lead to diagnoses that differ from such objective appraisal. They can therefore induce choices of action intendedly rational but which might in fact be far from optimal.

These perceptions of what is at stake are the basis of actors' involvement in or opposition to a reform process. Involvement in or opposition to a reform process are a form of action or reaction and, thus, depend on an actor's own diagnosis of the situation. Since perceptions vary from one actor to another, a whole range of diagnoses can be found among stakeholders and lead to a variety of strategies. These different strategies of multiple stakeholders confront each other on the same system both in an objective way (i.e. actions over the same space and time reality) and in a relational way (i.e. interactions over social and institutional rules). They can be conflicting, collaborating or, on the contrary, unable to collaborate (Ollagnon, 1987). Building successful policy changes implies that the "objective" and "relational" effects of these confrontations are taken into account. Therefore, it requires a good understanding of these elements that goes through an assessment of how stakeholders perceive the potential gains and losses of such changes.

The stakes, as perceived by each stakeholder, can be revealed at the level of the stakeholder himself. The PACT method can provide such information. It aims at understanding how each actor perceives the current state of a system (in other words, what is his assessment of the system's qualities), how he perceives the on-going actions of and interactions among the different stakeholders and their effects, and how he perceives the different possible evolutions of the system (Box 9).

Most of this information, although clearly strategic, is seldom generated on a systematic basis, rarely revealed to other actors and never shared among stakeholders. It is mostly qualitative information, difficult to handle without a clear method. The PACT method proposes a way to overcome this difficulty (Jésus, 2001).

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Box 9.

The PACT Institutional Survey Method

This survey method is strongly inspired by the work undertaken by H. Ollagnon (Ollagnon, 1998). Institutional surveys are part of the PACT method. As such, they come after the phase of interview preparation and should be followed by the phase of interview analysis and the phase of global synthesis (Jésus, 2001).

Objective and procedure for interviews

The aim of actors' interviews is to get sufficient information on the four points below:

1. How the actors perceive the current state of the situation;
2. How the actors perceive the current actions taken in the system;
3. How the actors perceive the different possible futures;
4. How the actors conceive the different paths of action for a better future.

This, however, doesn't mean that the interview starts from point 1 to finish with point 4. The interview should start with a presentation of the interview objective and global procedure. At this point, the actor becomes aware of the topic chosen and will, in most cases, start to express his opinion on it. If he doesn't, the interviewer may start with point 1 and have him explain his view on the chosen topic.

In whichever case, the role of the interviewer is to follow the way each actor presents his opinion and guide him from time to time to gather sufficient information on the four points. There is no form to fill in and no pre-requested order to follow. To do this efficiently, the interviewer continuously writes down all the actors' points of view, checks on his interview guide whether he has reached enough information on each point and asks a few general questions to pilot the interview in order to extract the missing information. More detailed questions can be used when general ones do not yield enough details.

Interviews can be carried out with one or several interviewers, bearing in mind that, in any case, interviewers have to do the analysis and (participate in the) synthesis work on their own interviews. It is not possible, for instance, to have someone carry out the interviews and then pass them to someone else for analysis. The sample of actors to be interviewed should be divided into several parts: several "micro-level" samples, grouping actors directly in contact with reality (field actors) and a "macro-level" sample, grouping all actors not in direct contact with realities but in charge of decisions on wider scales. Each part can then be under the responsibility of one interviewer, along with the analysis of the interviews itself.

Guide for interviews

The guide for interviews describes the different important elements of information to be gathered for each of the four points of the method. It is not to be used as a questionnaire or as a plan for an interview but as a guide. For each element, the information to be collected concerns the opinion of the actor himself, not to be mixed with the opinion of the interviewer nor with the opinion of another person present during the interview.

The first point is the "identification of the **situation and the actors**". For each actor, information should be gathered on:

- How the situation is perceived by the actor; what the actor thinks of the topic;
- Which other actors are concerned by the situation;
- How the other actors perceive the situation according to the interviewed actor.

The second point concerns the "**diagnosis of current actions**". For each actor, information should be gathered on:

- The actions of the actor, and of other actors, on the situation;
- The effects of these actions on the situation;
- How the different actors interact and the reasons for doing so;
- The existence of means to regulate these interactions;
- The effects of actors' interactions on the situation;
- The way actions and their effect on the situation changed in the past.

The third point concerns the "**prospective of evolution of the problems and the reactions to them**". For each actor, information should be gathered on:

- Images of possible futures (trend, positive evolution and negative evolution);
- The time frame of these three possible evolutions;
- The scope (geographical, administrative, etc.) of these three possible evolutions;
- The path leading to these possible futures;
- The reactions of the actor, and of the other actors, for each possible future.

The fourth point concerns the "**strategy for action**". For each actor, information should be gathered on:

- The objectives and demands of the actor for the system's evolution;
- The path of change proposed to reach these objectives and satisfy these demands;
- The means and tools of change proposed;
- The type of management and co-ordination processes that need to be built;
- The role of the actor, and of the other actors in this path of change and in the new forms of management and co-ordination.

The importance of having access to this kind of information for public decision is three fold. First, it helps understand why and how stakeholders make their decisions. Second, it allows to compare the stakeholders' own appraisal of reality with a more "objective" one generated with technical and economic information. The suitability of stakeholders' individual choices can thus be assessed and discussed. Third, on another level, it also provides insights on the underlying rules and strategies of interaction among stakeholders. This enables to identify possible opportunities for collaboration and common actions that can then be used in the formulation of public decisions.

Generating and revealing information on the technico-economic realities

This section presents ways secondary data sources, expert meetings and technico-economic surveys can be used to identify important stakes for policy issues. These information sources and tools are useful to generate information for better public decision-making and, in the case of expert meetings, can even help initiate stakeholders participation and information sharing. But, they need to be associated with analytical tools in order to construct organized evidence of important stakes. Several examples are presented hereafter utilizing comparative classification, case comparison and commodity chain analysis as illustrations of how this can be achieved.

Comparative classification

Broad categories of stakeholders (farmers, traders, etc.) are usually difficult to apprehend. Part of the difficulty lays in the fact that they assemble an important diversity of situations. The use of classification tools to build a typology allows scientists and analysts to simplify this diversity by focusing on several salient elements relevant to a specific issue or group of problems.

A whole range of tools can be used to build such typologies. Expert meeting methods (Detailing too generic ..., p. 21) are among them, and several statistical tools using data collected during field surveys can also help. A good example of statistical methods for classification is the use of 'hierarchical classification' based on criteria coming from a 'principal component analysis' that can be tested with the 'T-Test' method. Other methods exist as well. Anyhow, it should be remembered here that any method is just an instrument, and that using an instrument, even a very sophisticated one, can not excuse a decrease of critical analysis from the users. On the contrary, cross-checking and direct confrontation with reality can help such tools become very useful. For instance, some effective and efficient procedures consist of using the results of expert meetings to make statistical analysis more effective and "reality" oriented, or to cross-check expert meetings results with detailed field surveys.

Whichever method is used, two important elements should be found in a valuable typology: clearly differentiating criteria and contrasting types as a result.

Two examples can illustrate these points. The first comes from a survey on 120 farmers in the Red River Delta, Viet Nam, concerning the issue of the performance of rice and pig commodity chains and the relation of farmers with markets. The second comes from a survey on 120 farmers in the southern part of West Java, Indonesia concerning the issue of poor farmers' income. In both cases, expert meetings had been organized first to facilitate the organization and implementation of the surveys (Bourgeois, 2001 for details on expert meetings).

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In the case of Viet Nam, the resulting typology showed four main types of farmers producing pigs according to their relation with the market³ (Table 9):

- Farmers producing piglets for other farmers to fatten (types A and B);
- Farmers producing few pigs, mainly to secure enough manure for their rice fields and as a saving scheme (types C and D);
- Farmers producing around 10 pigs per year, but facing difficulties in sustaining this level because of recent price decreases and a consequent drop in benefit (types E and F);
- Farmers producing many pigs per year, in association with an activity ensuring a stable supply of cheap feeds (types G and H, the latter producing half raised pigs, around 30 kg, to be fattened by other farmers).

Table 9.

Type of pig sold	Piglets		Meat pigs					Half-raised
Scale of pig raising			Less than 6		More than 6			
Rice sale	No	Yes	No	Yes	Yes	No		
Type	A	B	C	D	E	F	G	H
Number of meat pigs/year	-	-	3	3	7	9	24	326
Weight of pigs (kg/head)	-	-	73	64	76	82	92	25
Price of pig (đôngs/kg)	-	-	8,387	8,811	9,261	9,530	8,974	10,948
Cost of feeds (đôngs/kg)			2,345	2,437	2,228	2,466	2,004	2,017
Cultivated land/person (m ²)	1,550	610	430	790	1,010	610	400	180
Quantity of paddy sold/year (kg)	-	722	-	1,012	632	-	~**	-
Paddy selling price (đôngs/kg)	-	2,699	-	2,240	2,313	-	-	-
Paddy yield (kg/sao)	151	170	170	168	170	180	171	156
Paddy production/person (kg)	593	536	362	631	727	515	335	90
Quantity of piglets sold/year (kg)	381	293	~**	~	~	~	~	~
Weight of piglet (kg/head)	12.1	10.6	~	~	~	~	~	~
Price of piglets (đôngs/kg)	11,798	11,655	~	~	~	~	~	~
Income/person (1,000 đồngs)	1,915	1,345	1,047	1,417	2,365	1,372	2,984	3,008
Income from rice	26%	54%	40%	52%	41%	49%	17%	4%
Income from meat pig*	-	-	~	~	-	~	15%	41%
Income from piglet*	17%	9%	~	~	-	~	~	~
Income from other agricultural activities	43%	15%	23%	14%	15%	32%	5%	2%
Income from food trade or processing activities	4%	-	12%	2%	-	-	55%	47%
Income from other non-agricultural activities	3%	10%	14%	25%	31%	16%	5%	6%
Other Incomes	8%	12%	11%	8%	12%	3%	3%	-
Estimated proportion in total population	< 5%	< 5%	10%	50%	< 5%	< 5%	15-25%	< 5%
Number of surveyed households	4	7	17	40	9	9	21	5

* Pig and piglet raising doesn't raise much cash most of the time because the cost of feeds is high. Therefore, even for farmers selling around 10 pigs yearly, net income from pigs appears close to zero. Moreover, pig income does not include the value of manure produced by pigs used on rice to increase yields.

** The "~" signs indicates very small values that can be considered as nulls

N.B.: Type A = Piglet raising farmers
 Type B = Mixed piglet/rice selling farmers
 Type C = Small poor subsistence farmers
 Type D = Rice sellers
 Type E = Combined pig raising/rice selling farmers
 Type F = Middle-scale pig raisers
 Type G = Farmers combining feeds trade and large scale pig raising
 Type H = Large-scale half-raised pig raisers

Source: Surveys conducted by the authors and the team of Vietnamese scientists from VASI (1998-1999).

³ The typology presented in Table 9 is more complex than the one described here since it classifies farmers according to their relation with both the rice and the pig markets.

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During the survey, most farmers complained about the low level of profitability in pig raising. A quick analysis confirmed that farmers selling their pigs at around 9,000 dongs/kg with a feed ratio close to 4 and an average cost of feeds close to 2,400 dongs/kg could not raise much profit (manure production not taken into account in the selling price). However, after comparing farmers raising a few pigs and farmers raising many pigs (Table 10), it appeared that this general situation was not reflected in types G and H i.e. for the farmers producing pigs in association with an activity providing cheap feeds (mainly rice bran, by-products of food processing). Through this comparison the cost of feeds clearly emerged as a crucial element in making pig raising profitable.

Table 10. Comparing feed costs among different types of farmers in the Red River Delta, Viet Nam

Farm types	C	D	E	F	G	H
Average ratio kg feed/kg live weight	4.2	4.3	3.9	4.6	3.8	3.5
Average cost of one kg pig feed (dongs/kg)	2,440	2,230	2,350	2,470	2,000	2,020
Average feed cost (dongs/kg live weight)	10,250	9,600	9,200	11,600	7,600	7,100

At the time of the survey (1999) one US\$ was equivalent to 14,000 dongs, the national currency.

Source: Surveys conducted by the authors and the team of Vietnamese scientists from VASI (1998-1999).

Further analysis and search for secondary data showed that the feed costs in Viet Nam were much higher than in other countries (almost twice the cost of USA pig raising farmers) and that even farmers raising many pigs (types G and H) did not obtain very high margins (only 200 dongs per kg on average during the survey period). This implied two important things. First, a small variation in the selling price can change the pig raising benefit from positive to null or negative. Second, the benefit/cost ratio of pig raising is very low, especially if compared to rice cultivation where, on average, farmers have a margin close to 70 per cent of the farm gate price.

In the case of Indonesia, the typology resulting from the analysis of the 120 surveys showed that sources of poverty separated poor farmers into three main categories according to the status of land tenure: the land owners, the land tenants and the wage workers. While all categories showed a yearly income per capita below the poverty line, within each category strong variations in income were still apparent and caused further separation of each category into two or three types (Table 11).

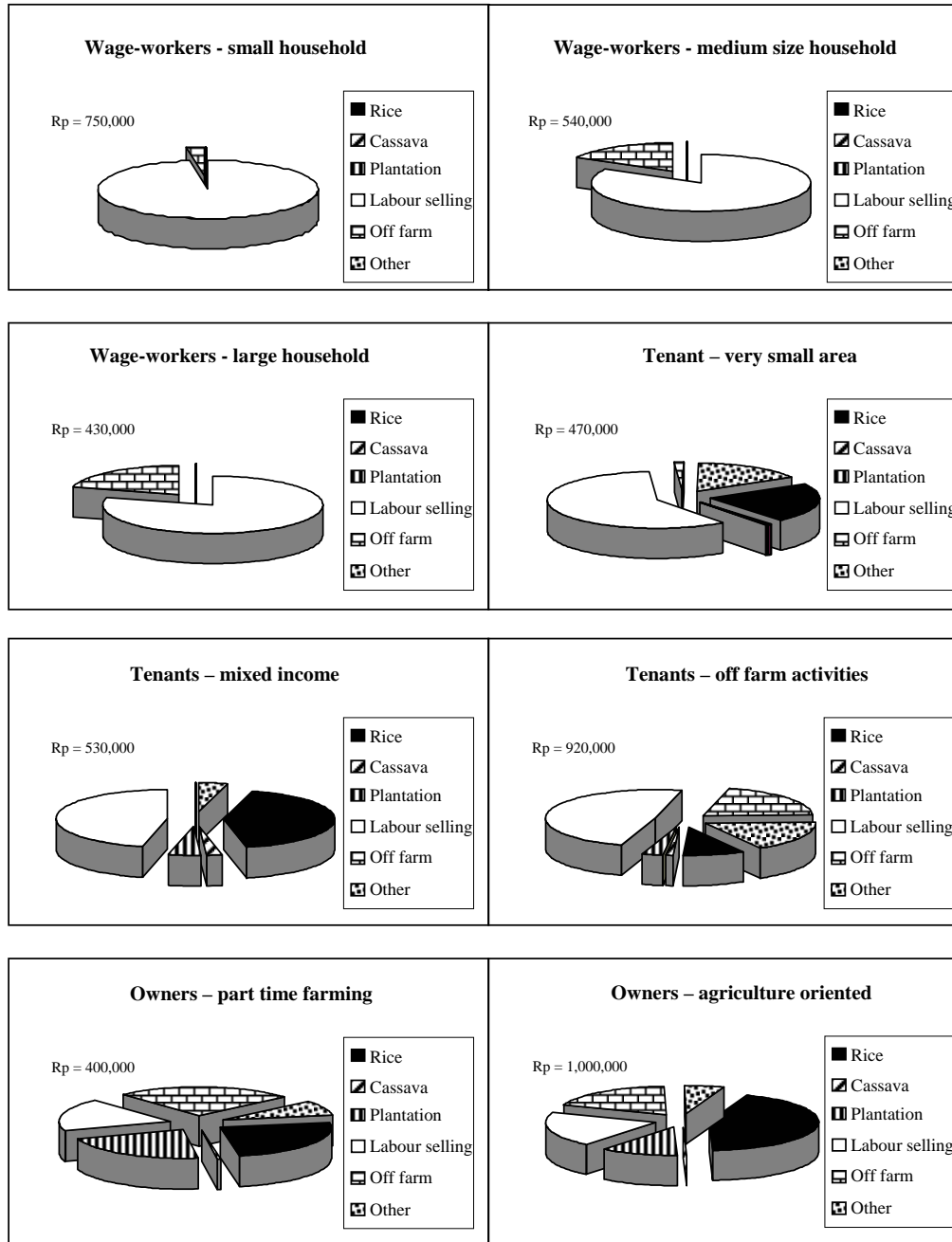
Table 11. Different types of poor farmers in the southern part of West Java

	Landless workers			Tenants			Owners	
	Small household	Medium household	Large household	Very small area	Mixed income	Off farm activities	Part time farming	Agriculture oriented
Area (ha)	0	0	0	0.06	0.18	0.15	0.17	0.20
Rice cultivation (ha)	0	0	0	0.05	0.14	0.11	0.09	0.15
Family size	3.30	4.17	5.67	3.83	4.25	3.75	5.18	3.96
Labour force	1.20	1.58	1.33	2.50	2.88	2.63	3.45	2.50
Land productivity (Rp per ha)	0	0	0	19,980,000	13,840,000	8,890,000	7,735,000	13,950,000
Labour productivity (per working day)	6,914	5,483	5,904	4,122	6,605	10,667	6,682	9,876
Rice self-consumption (%)	0	31.07	0	11	46	43	36	47
Net non agricultural income (per capita)	750,000	460,000	440,000	300,000	260,000	750,000	240,000	420,000
Net agricultural income (per capita)	0	80,000	0	160,000	270,000	170,000	160,000	580,000
Net income (per capita)	750,000	540,000	440,000	460,000	530,000	920,000	4,000,000	1,000,000
Share of agricultural income (%)	0	14	0	37	53	19	38	57
Share of agricultural non production (%)	97	68	79	61	44	37	20	22
Share of non-farm activities (%)	3	18	21	2	3	43	43	21
Percentage of poor farmers population	55%			15%			25%	

Source: Surveys conducted by the authors and the Indonesian team from BPTP, BAPPEDA, KANWIL (1999-2000).

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Figure 6. Income structure for different groups of poor rural households in south West Java and average annual income per capita



Source: Surveys of Cirad-amis Ecopol in collaboration with BAPPEDA, BPTP and KANWIL, West Java Province (1999-2000).

It seemed, at the beginning, that wageworkers were poor because, besides selling their labour, they did not have any other opportunity for income generation. However, it appeared through comparison of the different types of farmers, that wage working was the main source of income for all poor farmers with the exception of landowners (Figure 6).

Upon further analysis, it turned out that, for wageworkers, wage working was a full time activity for one or several members of the farm household (Table 12). Contrary to what was expected, wage working was not an activity merely filling the gaps in the time schedule of farmers without asset. Poor farmers' time was fully occupied by wage working activities in rural localities. One implication was that any program aimed at improving poor farmers' income could not be an additional activity, but had to be sufficiently profitable and time consuming compared to wage working for poor farmers to be attracted.

Table 12. Importance of wage-working activities for poor farmers

Type	Category	Family size	Occupation ratio*
Landless	Small household	3.3	89%
	Medium household	4.2	98%
	Large household	5.7	95%
Tenant	Very small area	4	85%
	Mixed income	4.3	61%
	Off farm activities	3.7	63%
Owner	Part time farming	5.2	51%
	Agriculture oriented	4.1	66%

* Considers only declared wage-working activities. Based on 200 working days per year for the family head and 100 working days per year for the spouse.

Source: Surveys conducted by the authors and the Indonesian team from BPTP, BAPPEDA, KANWIL (1999-2000).

Comparative classification tools provide a means for better public decisions at two levels. First, they help describe and understand the diversity of the situation among stakeholders and hence, avoid building policies based on the situation of an average actor, who may not exist in reality. Public decisions can thus become more adapted and more focused when necessary. Second, the comparative analysis of the situation of the different types of actors in a classification helps identify important challenges for the whole population considered. With such insight it is possible to assess the effect of public decisions on a given population of stakeholders, and to design more adapted and effective decisions.

With stakeholder classification, it is also possible to enlarge the scale of comparison in order to identify important stakes that concern larger populations or even the global social structure and environment in which they operate. The case comparison technique and the example chosen in the next part illustrates this point.

Case comparison

Case comparison is a simple method that can produce interesting insights. It consists of comparing the situation and constraints of a similar activity at different places within the same country or in different countries.

In this method, information can be supplied by secondary sources or generated through expert meetings or surveys. An illustration of the use of this method to assess stakes of rice cultivation in Indonesia is presented in Box 10.

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Box 10.

Variation of rice profitability in Indonesia, and its comparison with Viet Nam

Rice is one of the major crops and the major staple food in Indonesia and most farmers with a plot that is suitable for rice cultivation will grow it. However, the profitability of this crop may greatly vary. While simple calculations showed yield levels similar or higher than other Southeast Asian countries, as well as similar input costs, similar labour intensification and similar farm-gate price levels, for land and labour the picture is different (Table 13).

For most landowners, hired labour is the dominant production cost. Labour is hired not only for cultivation, but also for harvesting, according to specific arrangements. For tenant farmers, the cost of access to land (renting or sharecropping) represents 30 to 60 per cent of the total cost with an additional 30 to 45 per cent for hired labour. This tenure system doesn't exist in Viet Nam where access to land only requires the payment of a fixed seasonal or annual land tax set at a comparatively low level.

The development and profitability of rice production in Indonesia appears thus, conditioned by specific institutional aspects that do not exist in Viet Nam. The first one relates to the social dimension of hiring wagers. Most farmers employ wagers even if they are able to work themselves in their own fields. This is particularly true for the dominantly collective harvesting system, where harvesters are paid in kind (around 10 per cent of the total yield). The second is the institutional arrangement ruling land use. The price paid to owners follows local rules that may vary from locality to locality according to the agro-ecological and socio-economic conditions, but the related cost always represents an important share of the total yield (around 50 per cent of the yield).

So far, land and labour use practices in Indonesia are still considered as part of the institutional environment and not tackled as policy issues in Indonesia. However, comparison with the Viet Nam case highlights that these strongly affect the economic sustainability of rice production for many Indonesian farmers. Because of different land and labour use practices, production costs are two or three times higher in Indonesia and net benefits consequently lower. In fact, for Indonesian sharecroppers, a price decline as the one observed in 2000-2001 would mean no benefit at all from rice cultivation.

Table 13. Cost structure of paddy cultivation in Indonesia and Viet Nam (1998-1999)

	West Java, Indonesia						Red River Delta, Viet Nam	
	Sharecropper		Renter		Owner		Owner	
	\$/ha	%	\$/ha	%	\$/ha	%	\$/ha	%
Seed costs	5	1	14	3	9	3	21	10
Fertilizer costs	36	5	97	18	61	18	64	30
Pesticide costs	13	2	21	4	21	6	14	7
Irrigation costs	0	0	0	0	27	8	38	18
Land access costs	441	63	173	32	0	0	46	22
Rented labour costs	201	29	236	44	224	66	29	14
Total costs	695	100	542	100	342	100	212	100
Average paddy yield (t/ha)	4.7		4.7		4.7		4.7	
Average paddy price (\$/kg)	0.18		0.18		0.18		0.16	
Gross product	846		846		846		752	
Net benefit	151		304		504		540	

Source: Surveys conducted by the authors, the Indonesian team from BPTP, BAPPEDA, KANWIL and the team of Vietnamese scientists from VASI (1998-1999).

Comparing the situation of rice producers across countries allows drawing conclusions that would have been more difficult (or even impossible) to reach if focused on only one country or region. The larger range of possible diversity enriches the comprehension of what is at stake in each case. In our example, going from Viet Nam to Indonesia modifies the institutional rules and structures that regulate land and labour use. It thus becomes possible to identify the effect of those rules and the important stakes behind them.

The effect of policies often goes beyond the limits of a broad type of stakeholder or their associated sector. For this reason, the tools presented above need to be completed with tools enabling to identify stakes at larger inter-sector or inter-stakeholder levels. This is the case, for instance, when the problems considered concern, at the same time, producers, traders and consumers. In such cases, stakes have to be identified at the commodity chain level.

Commodity chain analysis

The problems of agricultural development are often studied through the analysis of the production side or through analysis of the international market side. The commodity chain concept considers the chain of actions from production to consumption as a whole system providing consumers with specific products. It allows the analyst to consider the impact of several levels of transactions on important issues like the product quality or its competitiveness.

Within the CADIAC method (Bourgeois and Herrera, 2000), a comprehensive method is proposed to analyze such agri-food systems. This method considers three main domains to be analyzed:

- The structure and functioning of a commodity chain, encompassing the activities of its different actors and their relations;
- The national context of a commodity chain, focusing on the relations between the commodity chain itself and the rest of the national economy;
- The international context of a commodity chain, focusing on the nature and organization of international exchanges.

Analyzing the structure and functioning of a commodity chain

Analyzing the structure and functioning of a commodity chain requires first, the identification and characterization of its different actors (producers, processors, traders, consumers, etc.), and second, the characterization of the relations among the actors within this commodity chain.

Expert meetings and surveys can be used to identify and characterize the different actors as presented in Chapter II: Expert meetings for the identification and ..., p. 25. It can also provide information on the flow of products among these actors and help identify the main marketing circuits (Box 11).

Box 11.

The main marketing circuits for rice and pigs in the Red River Delta

Rice (paddy) marketing in the Red River Delta goes through two main channels, a short local one and a long outbound one (Figure 7). For the former, paddy is sold to local collectors (hang xao) who husk and mill it, renting the service of small private millers, and sell it directly to local consumers. For the latter, the same collectors sell their rice to local wholesalers; local wholesalers sell it to larger inter-provincial wholesalers who then sell it to retailers.

Rice sold by collectors is often only partially milled and wholesalers have to mill it further, to sort grains and to polish them.

The relative importance of these two main circuits is very dependant on the situation of rice self-sufficiency of each locality. Localities producing insufficient rice for their use will have a dominant short local circuit. In their case, rice is sold for inner district consumption; no rice goes out to other provinces. Localities producing more rice than they use will have a dominant long outbound circuit. In their case, 60 to 90 per cent of the rice sold is bound for other provinces (including big city markets).

Figure 7.

The short local circuit:

Farmers → Paddy collector → Local rice consumers

The long outbound circuit:

Farmers → Paddy collector → Local wholesaler → Outside wholesaler → Retailer → Rice consumer

Continued

Box 11. (continued)

The main marketing circuits for rice and pigs in the Red River Delta

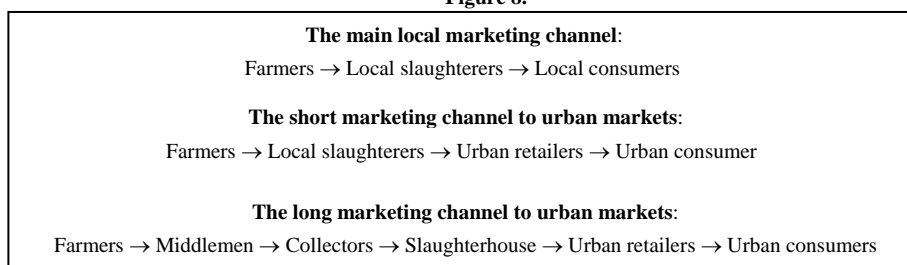
Most of the rice that is sold by farmers goes to consumers outside local boundaries. In fact, looking beyond the Red River Delta, interviews of wholesalers revealed that large quantities of rice were traded to and from many different regions of Viet Nam all year long. It appears, thus, that the rice market is a dynamic market where flows constantly link together most regions of the country.

Contrary to paddy production, all pigs produced by farmers are sold to traders. For most surveyed localities, half of the total pig production is sold for the local market and half is sold for the outside market (for urban markets and other provinces). Few districts appear to have a majority of pigs sold for the outside market. However, the two different destinations are present there as well.

Trading pigs for the local markets always follows the same pattern: farmers sell to a local slaughterer who slaughters the pig, carves the meat and sells it directly to local consumers. Sometimes local slaughterers wholesale to retailers but this is not the predominant practice.

Pig trading to outside markets shows two distinct marketing channels (Figure 8): one specific of the districts close to urban markets, and another one more common in districts further from those markets. In the former, farmers sell to slaughterers who then bring the pig, or meat, to the urban market to sell it to urban retailers (some slaughterers even sell it directly to urban or sub-urban consumers). In the latter case, middlemen (who can also be slaughterers) collect pigs from farmers for a collector-trader who brings them to a slaughterhouse owner, usually in the suburbs of a city, who is paid for his service of slaughtering and who makes the connection between collectors and urban retailers.

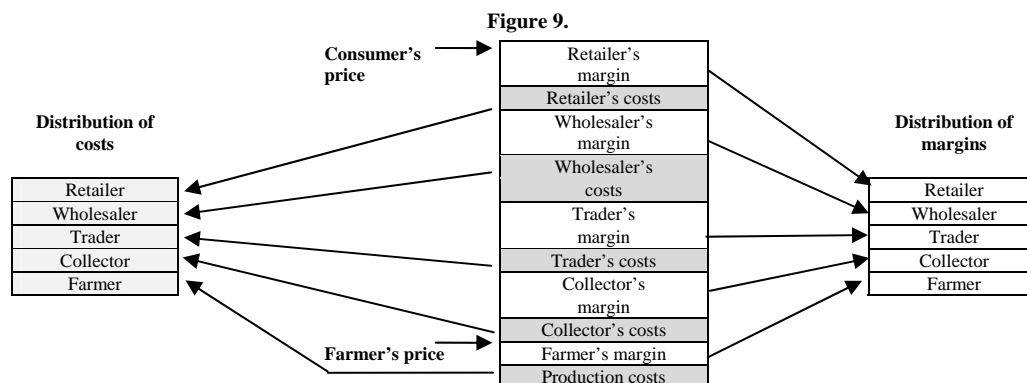
Figure 8.



To analyze how the different costs and margins along the marketing circuits of a commodity chain lead to a certain level of price, it is necessary to organize surveys of the different actors along the main marketing circuits. For each actor, the different costs involved in production, trading and processing, and corresponding selling and buying prices are detailed⁴. It is also necessary to evaluate the processing ratios at the different stages of the marketing circuits i.e. the amount of product bought necessary to produce one unit of processed product. For example, if 100 kg of live weight pig gives 70 kg of carcass plus offal when slaughtered, then the ratio from live weight pig to carcass is 70 per cent.

With these elements, the analyst can calculate the total costs and the margin on a unit of raw product at each level of the different marketing channels. Such calculations allow determining how the total costs and margins are shared among the different actors of a commodity chain (Figure 9.).

⁴ Concerning calculations, two important points are worth detailing. First, all actual costs should be included, but the labour of a private individual actor working for himself is usually not included. Second, to compare buying and selling prices and their corresponding costs, interviewers should follow the flow of trade and not always use data of the same date. Very often, a product bought today can be sold tomorrow or even later. Today's buying price is fine, but today's selling price might be the selling price of a product bought yesterday or even before.



This method, used for the rice and pig commodity chains of the Red River Delta, Viet Nam, showed results that were strikingly different from the common appraisal of policy makers and farmers. It was commonly considered that traders were making high margins while squeezing farmers selling price. In fact, it turned out that traders, who are mostly part-time farmers, had low margins per unit of product and provided Vietnamese consumers with rice and pork at prices very close to existing farm-gate prices (Box 12 and Box 13).

Box 12.

Price efficient rice distribution in the Red River Delta

As Table 14 shows, the costs and margins of each trader along the rice commodity chain reach only a few percent of the farm gate price (levels confirmed by other studies such as IFPRI, 1996). Taking account of the conversion rate from paddy to rice, the price of rice for local consumers is slightly lower than the farm gate price. This can be achieved because local collectors gain an additional margin by selling the bran coming from milling paddy. Looking at urban markets, it appears that urban consumers (in Hanoi) pay only 15 per cent more than the farm gate price. These price differences between producers and consumers are quite low; they allow farmers to get 87 per cent of urban retailing prices. By comparison, in Indonesia, the wholesale price is already 40 per cent higher than the farm gate price (Erwidodo and Hadi, 1999) while, in the USA, farmers get only 8 per cent of the retail price for cereals (USDA, 1998).

Table 14. Cost and margin distribution along the paddy-rice commodity chain (usual rice variety)

	Prices, cost and margins	
	In dong's per kg of paddy equivalent	As percentage of farmer's selling price
Farmer costs ^a	676	32%
Farmer margin ^b	1,454	68%
Farmer selling price ^c	2,130	100%
Collector costs	49	2%
Collector margin	52	2%
Bran selling value:	174	
Collector selling price ^d = Local consumer price	2,057	97%
Local wholesaler costs	70	3%
Local wholesaler margin	32	2%
Local wholesaler selling price ^d	2,160	101%
Urban wholesaler costs	48	2%
Urban wholesaler margin	78	4%
Urban wholesaler selling price ^d	2,285	107%
Urban retailer costs	93	4%
Urban retailer margin	63	3%
Retailer selling price ^d = Urban consumer price	2,441	115%

^a The cost, for all actor, exclude family labour, but include all other costs.

^b The margin, for all actors, is the income of the actor from pig i.e. gross product minus all cost except family labour.

^c Selling paddy. ^d Selling rice.

Source: Survey conducted by the authors and the team of Vietnamese scientists from VASI (1998-1999).

Continued

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Box 12. (continued)

Price efficient rice distribution in the Red River Delta

The only traders who manage to get a rather high margin per unit in this chain, beside the farmers, are paddy retailers of districts close to Hanoi, who sell rice directly to Hanoi consumers. Since they do what is usually done by four different actors, their gross margin reaches 15-20 per cent of the farm gate price.

These results depict a situation quite far from the common image of the “greedy trader”. Interviews with traders revealed that the existence of numerous paddy and rice traders at all levels makes it very difficult for any trader to raise high margins. Moreover, evidence shows a decrease in margin levels from 1990 up to now (IFPRI, 1996).

The overall effect is that urban or rural consumers have access to rice at low prices (i.e. not much higher than farmers’ prices)⁵. At the same time, the benefit to farmers on each kg of paddy is quite high (two-thirds of their selling price on average). Therefore, we argue, that, the rice commodity chain can be considered quite efficient concerning prices.

Box 13.

Price efficient pork meat distribution in the Red River Delta

As shown in Table 15 to Table 17, farmers producing pigs have a low margin per kg of live pig and a very low benefit/cost ratio. On the other hand, traders have higher margin levels per kg of raw product than in the rice commodity chain, with the exception of slaughterhouse owners⁶.

Urban retailers manage to get the highest margins, especially when selling pigs from far away places. Actually, for some retailers in Hanoi central markets, the margin can even be twice the figure presented in Table 17. In urban markets, demand for meat is higher than in local rural markets; incomes are higher, people eat more meat and have more regular cash sources. Retailing meat in cities is therefore, easier and prices can be set higher, especially with wealthier than average consumers, provided retailers can convince them their meat is of better quality.

Similar to the rice commodity chain, pig traders do not appear to gain from high margins. Local meat consumers pay for their meat with a price 10 per cent higher than farm gate price, while urban consumers pay 20 to 25 per cent more than farm gate price (in the case of central urban markets, it would be 35-40 per cent more). Farmers are paid about 80 per cent of the urban retailing price⁷. This level of farmer’s share in the retail price is high compared to what happens in the USA, where farmers get only 25 to 40 per cent on the pig retail price (USDA data, 1990-1999).

Table 15. Cost and margin distribution along the pig commodity chain: short local marketing channels

	Price, margin and cost			
	In dongs per kg of equivalent live weight		As percentage of farmer’s selling price	
	Nam Dinh	Ha Tay	Nam Dinh	Ha Tay
Farmer costs	8,280	9,065	98%	98%
Farmer margin	200	200	2%	2%
Farmer selling price	8,480	9,265	100%	100%
Local slaughterer costs	187	216	2%	2%
Local slaughterer margin	515	540	6%	6%
Slaughterer selling price = Local consumer price	9,182	10,021	108%	108%

Source: Surveys conducted by the authors and the team of Vietnamese scientists from VASI (1998-1999).

⁵ One kilogram of paddy sold for 2,100 dongs by farmers is equivalent to one kg of rice at 3,000 dongs (conversion coefficient of 69 per cent). When it reaches the urban market the price is 3,500 dongs per kg.

⁶ It seems that pig traders manage to get a higher margin per unit compared to rice traders because there is less competition among pig traders. While there is one rice collector for around 15-30 farmers, there is only pig collector for about 100-200 farmers.

⁷ Of one kg of live pig sold for 9,000 dongs by a farmer, 70 per cent is represented by the carcass (meat and bones). Out of this 70 per cent, a little more than half can be sold at a price per kg higher than the farm gate price (50 to 150 per cent higher depending on the cut of meat). The rest is sold at a price per kg lower or equal to farm gate price. In the tables presented, urban retailers who sell pork obtain 20,000 to 25,000 dongs/kg. The different selling prices of each piece, converted with their respective conversion ratios, put the global urban retail selling price at 10,500-11,000 dongs/kg of live weight equivalent.

Box 13. (continued)

Price efficient pork meat distribution in the Red River Delta

Table 16. Cost and margin distribution along the pig commodity chain: long marketing channel to urban market (from most localities)

	Price, margins and costs	
	In dongs per kg of equivalent live weight	As percentage of farmer's selling price
Farmer costs	8,280	98%
Farmer margin	200	2%
Farmer selling price	8,480	100%
Collector costs	221	2%
Collector margin	249	3%
Collector price*	8,950	106%
Urban slaughterer costs	80	1%
Urban slaughterer margin	67	1%
Urban slaughterer price	9,097	107%
Urban retailer costs	158	2%
Urban retailer margin	116	13%
Retailer selling price = Urban consumer price	10,371	122%

*Margin and cost of the middlemen linking farmers to collectors are included in the collector's costs.
Source: Surveys conducted by the authors and the team of Vietnamese scientists from VASI (1998-1999).

Table 17. Cost and margin distribution along the pig commodity chain: short marketing channels to urban market (localities close to Hanoi)

	Price, margins and costs	
	In dongs per kg of equivalent live weight	As percentage of farmers' selling price
Farmer costs	9,065	98%
Farmer margin	200	2%
Farmer selling price	9,265	100%
Local slaughterer selling in Hanoi costs	175	2%
Local slaughterer selling in Hanoi margin	695	7%
Slaughterer to Hanoi selling price	10,135	109%
Retailer in Hanoi cost	270	3%
Retailer in Hanoi margin	638	7%
Urban retailer price = Urban consumer price	11,043	119%

Source: Surveys conducted by the authors and the team of Vietnamese scientists from VASI (1998-1999).

Finally, the pig commodity chain appears to be quite efficient in terms of price, except for farmers. It provides rural and urban consumers in the Red River Delta with meat at prices close to farm gate prices and enables traders to benefit from a margin slightly higher than in the rice commodity chain. Farmers do not benefit much from selling their pigs though, but one cannot conclude that it is because of traders' behaviour. High production costs are a much more obvious reason for such low benefit levels (Table 10).

Analyzing the national context of a commodity chain

Analyzing the relation of a commodity chain with the national economy can provide insights on the importance of the commodity studied in the country and on the effects of the rest of the economy on the performance of this commodity chain.

To assess the importance of a commodity studied in a country, the joint use of secondary data, expert meetings and, sometimes, surveys can be used and combined to appraise:

- The economic welfare generated by the activities of the commodity chain in the national economy, which can be evaluated by its share in the GDP.
- The provision of employment provided by the activities of the commodity chain in the national economy.

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- The share of the products materializing from the commodity chain on total exports or imports of the country.
- The importance of the products coming out of the commodity chain for the alimentation of the national citizens.
- The area allocated to the production of the commodity studied.

It is very important to keep in mind that this appraisal is to be made for the whole commodity chain and not only for the production side. Traders, processors and transport operators all contribute to the total national added value and to employment, and therefore, should be taken into account.

To assess the effects of the rest of the economy on a commodity chain, the use of secondary information sources can be complemented by expert meetings and ad hoc interviews to define:

- How the existing policies and regulations affect the functioning of the commodity chain.
- How the existing infrastructure and services support or constrain the functioning of the commodity chain.

It is important to note, though, that secondary information sources or expert meetings mainly provide information on the general impact of the rest of the economy on a commodity chain function (Box 14). To detail the role of the different institutions and stakeholders in and their effects on a commodity chain's performance, the organization of specific institutional surveys may be required (Box 9).

Box 14.

The importance of rice and pig commodity chains in the Red River Delta, Viet Nam

Rice and pig in Viet Nam can be considered as the two main agricultural products, especially for the northern part of the country. Almost all farmers produce rice and raise pigs on their farms. Rice cultivation occupies most of the cultivated area, especially in irrigated areas and pig raising is the main animal husbandry activity.

Similarly, rice and pork are two main components of the Vietnamese alimentation: rice is 'the' staple food in Viet Nam (the translation of the verb "to eat" in Vietnamese is literally translated by "to eat rice") and pork the main source of animal protein (Jésus, and Thê Anh, 1997). Rice is also one of the main sources of agricultural exports (Viet Nam is currently the third largest world exporter), although most exports originate from the southern part of the country.

These elements are usually well known among the different stakeholders. In fact, they led the stakeholders collaborating within the Ecopol project to choose the two commodities for the case studies presented. However, most of these arguments concern the role and importance of producers. Moreover, many policy makers argued that if problems existed, they were faced by farmers and induced by the behaviour of traders (considered as having unfair market behaviour).

Analyzing the importance of the non-production parts of the commodity chain showed that the stakes were rather different. Since most collectors and many local wholesalers happen to be farmers, rice and pig trade provides farmers with additional activities and income sources. Altogether, rice trading provides employment to 5-10 per cent of all paddy-selling farmers (paddy selling farmers representing about 60 per cent of all farmers). In the pig commodity chain, the network of traders is less dense than in the rice commodity chain. Pig trade can provide employment and a source of income to farmers but pig traders who are farmers only account for 1 or 2 per cent of the total number of pig producers (pig producers representing around 90 per cent of all farmers).

The importance of these employment opportunities is far from negligible. To maintain or improve income levels, the role of non-agricultural activities is often crucial for the Red River Delta farmers. They cultivate an average of 0.25 ha of land for each family of 4-5 persons and additional activities provide sources of income essential for welfare improvement and even agricultural development (Jésus, and Thê Anh, 1998). Already in 1993, it was estimated that 25 per cent of farmers' income in the Red River Delta came from non-agricultural activities among which, trading was an important part (State Planning Committee - General Statistical Office 1994). Recent studies even show that farmers without sufficient non-agricultural activities had faced income level decreases in constant terms over the last 5 to 10 years (Thê Anh, 1998).

Analyzing the international context of a commodity chain

Analyzing the situation of a commodity chain within the international market will give important insights for both national production that aims at exportation and national production that may have to face the competition of imported products.

Secondary information sources (that can be complemented by expert meetings and ad hoc interviews) can be used to assess:

- **the importance of national production in comparison with the international market:** appraising which are the main importing and exporting countries in the world, placing the national volume produced, exported or imported in perspective with such information, analyzing which country aims at the same market in the world, etc.
- **the commitment of the country within existing or planned international and regional trade agreements:** estimating the potential impact of such agreements on the functioning of the commodity chain.
- **the competitiveness of national products compared to other countries:** by comparing the costs and price levels at the different stages of the commodity chain concerning input provision, production, trading, processing, and distribution.

An illustration of how this method can help assess stakes is presented in Box 15.

Box 15.

The competitiveness of the pig and rice commodity chains in the Red River Delta

Competitiveness of the pig commodity chain

As presented previously, pork produced in Viet Nam is not competitive in the international market, and, contrary to existing opinions, this is not due to price levels (Box 7) or high trade margins (Box 13) but mainly to quality levels that do not meet international standards (Box 7). One of the hampering factors for pig production development is also revealed by looking at the production costs of farmers, which are very high compared to other countries' and, although they do not imply high prices, lead to low benefit levels for farmers (Table 10).

Competitiveness of the rice commodity chain

Viet Nam is currently the third, world rice exporter and has been exporting rice since 1989. However, exports of rice come from the southern part of the country (the Mekong Delta) and almost no rice has been exported from the Red River Delta.

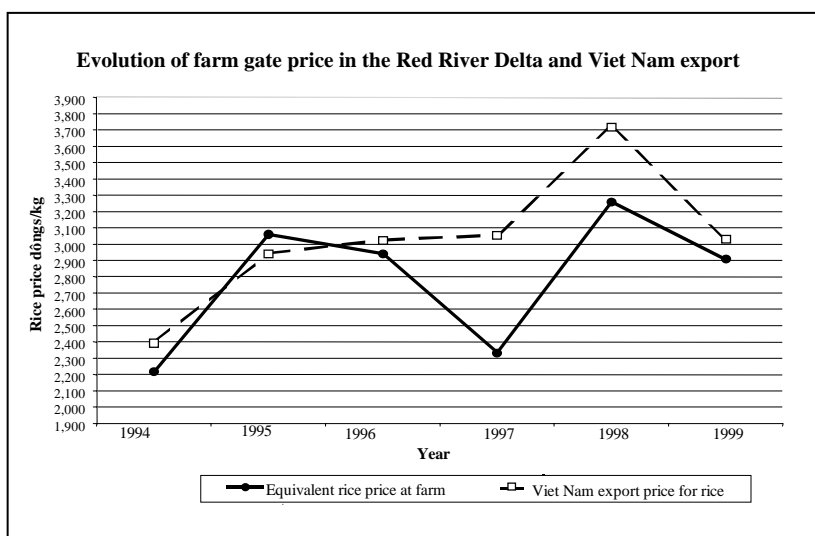
Comparing farmer's selling price and Viet Nam export price (Figure 10), it appears that during the last 6 years, exporting rice from the Red River Delta would have been possible during 1997 and 1998 (because of high price differences) but difficult for the four other years, since the price difference was very thin.

Continued

Box 15. (continued)

The competitiveness of the pig and rice commodity chains in the Red River Delta

Figure 10.



Source: Export data from the MARD and surveys conducted by the authors and the team of Vietnamese scientists from VASI.

If little rice has been exported from this region up to now, high price is one reason, but inadequate grain quality and grading is another. During trader surveys in 1999, it appeared that many rice traders faced problems with the quality of rice grains (Table 18). This problem didn't refer to the difference in rice varieties (usual, fragrant or glutinous), which have clear distinct prices all along the commodity chain. It referred to the grain quality within a variety: cleanness, colour, moisture level and proportion of broken rice.

Concern for this problem is not distributed evenly among actors, and this provides clues on the functioning of the commodity chain. The problem was mainly mentioned by wholesalers (40 per cent complain about it) and retailers. Almost no farmer nor collector mentioned it, which reveals that only when rice reaches wholesalers does grain quality start to be taken into account. Wholesalers buy rice from many collectors, all selling small quantities at a time (40 tons per year on average), and collectors themselves buy their paddy from many different farmers selling even smaller quantities. Wholesalers, thus, have rice coming from very different places and different persons and have to start to grade these heterogeneous sources into the grain qualities that the international and inter-provincial markets demand. Wholesalers are regularly informed of grain quality requirements in urban, inter-provincial or export markets but since no actor has done the grading job before, they have to do it all themselves, which proves difficult.

Of course, grading is not only difficult, it is also profitable; good quality grain can be sold at higher prices. However, defining a price for very heterogeneous grain sources is a difficult task, especially when big quantities are traded. All bags cannot be checked and errors of quality appraisal lead to lower benefit, and, sometimes, losses.

Continued

Box 15. (continued)

The competitiveness of the pig and rice commodity chains in the Red River Delta

Current grain quality management is also limiting the development of the commodity chain. First, since grain quality starts to be taken in account through prices at the wholesalers level, farmers and collectors do not have the information and the incentive to improve their grain quality. Second, since the international market requires precise grain qualities and grading, the current system (of northern Viet Nam) meets great difficulties in exporting rice.

Table 18. Traders' problems in the rice and pig commodity chains

Main problems	Proportion of traders facing problems					
	Rice commodity chain			Pig commodity chain		
	All traders ^a	Wholesalers	Urban retailers	All traders ^b	Wholesalers	Retailers
Delayed payments	30%	28%	40%	39%	40%	46%
Price instability	30%	44%	60%	28%	36%	29%
Insufficient quality	23%	39%	40%	43%	40%	45%
Lack of capital	23%	33%	0%	17%	30%	19%
Fierce competition	17%	28%	20%	17%	10%	21%

^a Includes: collectors, local wholesalers, inter-provincial wholesalers, processors, local retailers and urban retailers.

^b Includes: collectors, slaughterers, wholesalers, processors and retailers.

Source: Surveys conducted in the Red River Delta by the authors and a team of Vietnamese scientists from VASI (1998-1999).

As illustrated by the different examples presented, commodity chain analysis methods can identify problems that go beyond individuals or groups of similar individuals. They can identify technical or economic problems that lie in the commercial interactions among stakeholders and they can identify technical or economic problems of a whole group of stakeholders linked together by commercial exchange of a commodity.

Commodity chain analysis is part of a group of systemic methods that allow analysts to tackle problems on the scale at which they occur. In the example chosen from northern Viet Nam, the topic emerging from stakeholders, as an important problem, concerned the relation of farmers with markets. Such a topic defined a system whose boundaries followed relations for the commercial exchanges of agricultural commodities. As thus, the commodity chain analysis method fitted the system defined by the topic stakeholders felt as important.

The different tools presented in this part can help public decisions both during the preparation and the implementation phases. Identification of technical or economic stakes can help focus the preparation of reforms on the real and important problems. It has been identified, for instance, that policies for the development of pigs in northern Viet Nam should focus on measures to help reduce feed costs and improve the meat quality. Identification of technical or economic stakes can also help assess the feasibility of reforms considered as potentially interesting. It was shown, for example, that trying to design incentives for export of rice or pig from northern Viet Nam is likely to fail if no prior effort is made on quality improvement.

Generating and revealing information on the socio-institutional aspects of a system

The technical and economic tools presented above provide clues on in the situation of actors and their system but do not help to understand how stakeholders' perceptions determine their decisions or how the current web of stakeholders' interactions can hamper or facilitate public decisions. They do not provide information on how stakeholders could or should organize themselves in order to make changes happen. For this, a different type of method is required, such as the PACT institutional analysis method.

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As presented previously, institutional surveys (Box 9) aim at gathering information on how the different stakeholders perceive:

- the situation, i.e. the current state of the system;
- what is done by the different stakeholders in this situation;
- what may happen in the future from this situation;
- what should be done to improve the situation in the future.

This information can be crossed with the technical and economical information. This can help assess the relevance of stakeholders' perceptions in order to help them build better strategies, in which case institutional analysis is used after the technico-economic diagnosis. In another way, the PACT method can be used first to identify what stakeholders know and then focus technical-economic characterization of the situation and tailor the presentation of such a characterization on needed information.

However, the real interest of institutional surveys goes beyond the assessment of stakeholders' perception relevance. They can help prepare, craft and implement collective and common actions for policy reforms at various levels. Through a proper analysis and synthesis method (Jésus, 2001) institutional surveys can be used to:

- ✓ assess the features for which the need of action is broadly recognized by most stakeholders;
- ✓ unveil the situations where positive collaborations are ready to emerge;
- ✓ identify the key stakeholders who can initiate a process of change.

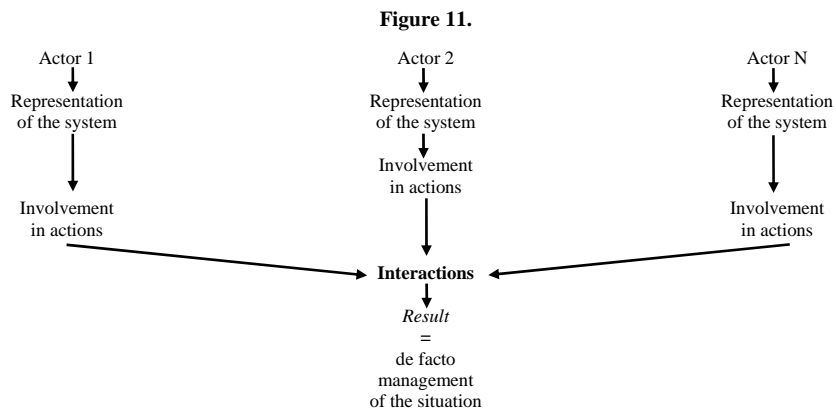
In this part, concepts and procedures to achieve this are presented, along with illustrations coming from the implementation of institutional surveys in Viet Nam.

Qualities, a concept to analyze stakeholders perceptions

The analysis of an institutional survey is performed through a predefined process, which is based on basic concepts that will be presented while going through the method.

The main hypothesis underlying the PACT method is that different actors who are facing the same situation see it in different ways and that the way an actor sees a situation (his perception of the problems related with this situation) determines how he defines his choices and his actions.

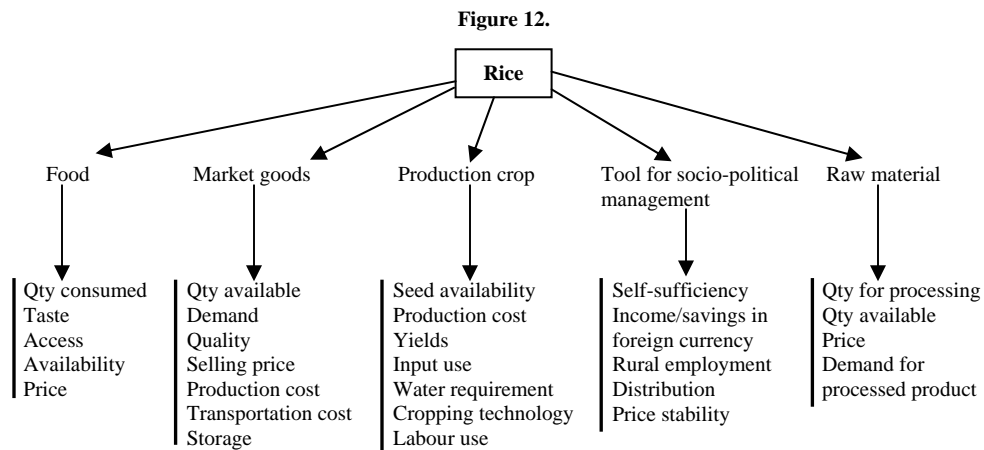
Since all the actors of a system take actions on the same reality, these actions influence one another. The result of these interactions is a de facto management of a situation that is not usually planned, co-ordinated or conscious (Figure 11).



Over time, stakeholders' interactions modify the current situation. As a consequence, actors modify their actions to adapt to what they perceive of the changes. Actors' decisions try therefore, to take into consideration three factors: (1) what they perceive of the situation, (2) what they perceive of the strategies of other actors and (3) what they perceive these actions can lead to in the future. Actors decide on their actions not only according to how they see the situation today, but also according to how they see the actions of others on this situation and how they perceive the possible evolutions.

To properly analyze such a situation, the concept of "quality" is used. This concept of quality does not strongly differ from the general meaning of quality: "a characteristic or feature of someone or something" (Cambridge University, 2000). Looking at a complex situation, or at a system, the concept of quality helps the analysts define features associated with a group of characteristics that are positive in essence: a quality is a feature of the system that stakeholders appreciate and want to see improved.

The different qualities of a system come from the different points of view of the various stakeholders looking at the same reality. The state of a quality can be evaluated through a set of characteristics on which one or several actors pay attention. Figure 12 shows an example of how five different qualities can be seen in a rice supply system and how, for each quality, a specific set of characteristics are used to assess its state.



Box 16.

Perceptions of stakeholders concerning the performance of the rice and pig commodity chains in the Red River Delta, Viet Nam

In the Red River Delta, Viet Nam, institutional surveys were conducted on the perception of stakeholders about the "performance of the rice and pig commodity chains" (Box 4). These surveys show differences within the perceptions of the different types of stakeholders regarding these commodity chains.

Farmers mainly pay attention to the income they can generate from cultivating rice or raising pigs. But this concern appears in two different ways. Some farmers focus on the sale of their product, on how much they can sell and at what price, while other farmers focus on their production costs, on how much they have to spend to get a given production.

Traders generally appear to be more concerned with the flow of goods. They pay attention to the easiness of reaching inter-provincial, urban or export markets, of transporting goods from one point to the other, and of collecting goods from farmers. They are also concerned with the adaptation of farmers' production to changing market demands (concerning both national and international demand) and the stability of production levels.

Consumers' concern focuses mostly on food safety problems (especially concerning pig products), but some consumers also pay attention to how easily they can access the goods they want.

Continued

Box 16. (continued)

Perceptions of stakeholders concerning the performance of the rice and pig commodity chains in the Red River Delta, Viet Nam

For the other actors (mainly government officials, local authorities and agricultural services) the concerns are more diverse. Attention is paid to the farmers' situation and their level of income, to the development of exports and to consumers' safety.

Besides these different points of view, several actors consider that rural development in general, and the performance of rice and pig commodity chains in particular, can be strongly influenced by the availability of work opportunities outside rice and pig production (including non-agricultural opportunities). For them, these activities, by providing additional income, can ease the pressure on land, increase farmers' standards of living and therefore, help them develop other activities while, at the same time, allowing higher consumption levels. Although this goes beyond the limit of the rice and the pig commodity chains, the subsequent influence is considered sufficiently important to include this information in the analysis.

Finally, considering these different points of view, the following qualities were defined for the analysis of institutional surveys:

- The producers' sale outcome (related to the adaptation of farmers' production to consumers' demands, which, in turn, determines the quantity sold and the price of sale at farm level).
- The efficiency of production (related to the costs and benefits of production).
- The efficiency of the exchange system after collection (related to the ease of making goods flow from collectors to consumers).
- The efficiency of the collection system (related to the direct relation between farmers and the market).
- Production stability (mainly related to pests, diseases and natural disasters).
- Food safety.
- Work opportunities.

It should be noted that the different actors' points of view presented above are a simplification of the actual perceptions revealed through institutional surveys. In fact, most actors combine, in their perceptions, several of the different points of view presented here as separate.

Assessing the qualities for which most stakeholders recognize a strong need of action

As can be seen with the example of the rice and pig commodity chains, analyzing results of institutional surveys leads to the definition of a list of qualities stakeholders perceive as important. For each type of stakeholder there is a specific position regarding these different qualities. One may consider the current state of a quality as plainly satisfactory while another wishes for a strong improvement. A stakeholder may be willing to improve a quality while another considers himself unable to do anything. With the PACT institutional analysis method, an analyst can determine the qualities which defining collaborative actions are possible, because a consensus of perception exists, and the qualities which agreement is difficult to achieve because positions differ.

To do so, the concepts of "demand" and "offer" on a quality need to be introduced. An actor focusing on a specific quality will often want and expect it to be improved. Such expectation defines a "quality demand" and each actor can have a different level of demand for each of the qualities considered. Similarly, an actor can also be willing to take actions to improve a specific quality, which, then, defines a "quality offer". Each actor can have a different level of offer for each of the qualities considered.

Levels of demand and offer for each type of stakeholder on the different qualities are estimated based on the results of institutional surveys. This estimation is done using a range of values from 0 (no demand, or no offer) to 5 (very high demand, or very strong offer). It is then entered into the tables proposed in the software of the PACT method (Jésus, F. 2001). Applied to the outcome of institutional surveys on the performance of the pig commodity chain in the Red River Delta, this method gives results as shown in the following tables (Table 19 and Table 20).

Table 19. Demands of stakeholders on qualities related to the performance of the pig commodity chain (Red River Delta, Viet Nam)

	Col. Sys	Trd Ex Sys	Pdo efficient	Stable pdo	Food safety	Pdr sel. Out	Other activ
Central govt.	3	4	4	3	1	4	1
Province	2	2	2	2	1	3	
Soentreprise	2	2	2	3	-	4	-
Wholesalers	1	4	2	2	2	1	-
District auth.	2	4	2	1	1	2	1
Dist. Ext. Serv	3	3	3	2	1	2	1
Dist. Vet	-	2	4	4	2	2	-
Dist. Mkt Mgt	1	3	1	2	3	-	1
Bank	2	3	3	1	-	2	-
Commune	2	3	2	2	-	3	1
Frmr pig>	1	3	2	3	-	2	-
Frmr pig< Mkt	1	2	3	3	1	1	-
Frmr pig<	1	1	2	2	-	-	-
Frmr piglet	1	1	2	1	-	1	
Retailers	1	2	1	2	2	2	1
Slaughterers	-	2	1	1	1	2	-
Collectors	1	4	2	3	-	2	-
Associations	3	2	1	-	-	3	1
Consumers	-	3	1	2	4	1	-
Feeding trader	-	3	3	1	-	1	-
Feeding industry	4	-	3	3	2	4	-
Breed Cie	-	-	-	-	-	-	3
Research inst	4	4	3	-	-	3	3
Hanoi retailers	-	4	-	-	2	3	-
Hanoi wholes	3	4	3	-	-	4	-

Legend:	
Actors	
<i>Central govt:</i> Central government authorities	<i>Associations:</i> Official farmers associations
<i>Province:</i> Provincial authorities	<i>Consumers:</i> Urban consumers
<i>Soentreprise:</i> State-owned pig processing companies	<i>Feed traders:</i> Traders of pig feeds (and pig medicine)
<i>Wholesalers:</i> Pig wholesalers (non-urban)	<i>Feed indust:</i> Industries producing pig feeds
<i>District auth.:</i> District authorities	<i>Breed Cie:</i> Pig breeding state company
<i>Dist. Ext. Serv:</i> Agricultural extension services	<i>Research inst:</i> Research institutes
<i>Dist Vet:</i> Veterinary services (public)	<i>Hanoi retailers:</i> Urban pork retailers
<i>Dist. Mkt Mgt:</i> Market management service	<i>Hanoi wholes.:</i> Urban pig slaughterers-wholesalers
<i>Commune:</i> Commune and co-operative authorities	
<i>Frmr pig>:</i> Farmers raising many pigs	Qualities
<i>Frmr pig< Mkt:</i> Market oriented farmers raising few pigs	<i>Col. Sys.:</i> Efficiency of the collection system (farm level)
<i>Frmr pig<:</i> Farmers raising few pigs	<i>Trd Ex. Sys.:</i> Exchange system efficiency after collection
<i>Frmr piglet:</i> Piglet producers	<i>Pdo Efficient:</i> Efficiency of production (farm level)
<i>Retailers:</i> Rural pork retailers	<i>Stable Pdo:</i> Production stability
<i>Slaughterers:</i> Rural pig slaughterers	<i>Pdr. Sel. Out.:</i> Producers' sale outcome
<i>Collectors:</i> Pig collectors	<i>Other Activities:</i> Work opportunities besides pig and rice

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

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Table 20. Offers of stakeholders on qualities related to the performance of the pig commodity chain (Red River Delta, Viet Nam)

	Col. Sys	Trd Ex Sys	Pdo efficient	Stable pdo	Food safety	Pdr sel. Out	Other activ
Central govt.	1	2	2	1		1	
Province	1	1	1	1		1	
Soentreprise	1	1	1	1		2	1
Wholesalers		2					
District auth.		1	1	1		1	
Dist. Ext. Serv			1			1	
Dist. Vet	1	1	2	2	1		
Dist. Mkt Mgt				1	2		
Bank		1	2				
Commune			1	1		1	
Frmmr pig>			1	2		1	
Frmmr pig< Mkt			1	2			
Frmmr pig<			1	1			
Frmmr piglet			2	1			
Retailers		2					
Slaughterers	1	1					
Collectors		1					
Associations	1	1	1			1	
Consumers		1			1		
Feeding trader			1	1			
Feeding industry			1			1	
Breed Cie							
Research inst	1	1				1	
Hanoi retailers		1			1		
Hanoi wholes	1	1	1			1	

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

With this information, it is possible to make a rough comparison between the current total demand and the corresponding offer on the various qualities that have been defined. This will help determine where the main demands occur and how offers confront these demands. One can then establish for which quality improvements are needed first.

In the case of the pig commodity chain performance (Table 21), two qualities appear predominant, having both a high level of total demand and a low ratio of offer on demand: the “efficiency of the exchange system after collection” and the “producers’ sale output”. In fact, most actors agree to say that the performance of the pig commodity chain can be improved by finding new markets and consumers and by adjusting farmers’ production to consumers’ standards of demand.

This type of consensus is also found for the “efficiency of production at farm level”. Most actors agree that, for pig production, farmers are hindered by too high production costs.

The existence of similar perceptions on three qualities has a strong meaning: for most stakeholders improving these qualities is a necessity. From this point, it is possible to promote a collective debate on which actions to implement for such improvement.

Another important result of this analysis is that it helps to uncover situations where actual actors’ positions go against commonly accepted perceptions. It is remarkable, for example, that an important number of actors, including traders, consider that the farmers’ situation needs to be improved. This contradicts the usual image of traders as farmers’ predators and shows that many among them consider that the development of the pig commodity chain also depends on a healthy economic situation for farmers even if this wouldn’t profit them directly.

Table 21. Comparison between total offer and total demand for the different qualities related to the performance of the pig commodity chain

	Col. Sys	Trd Ex Sys	Pdo efficient	Stable pdo	Food safety	Pdr sel. Out.	Other activ
Total demand	27	53	43	40	19	38	7
Ratio O/D	22%	28%	42%	38%	21%	24%	14%

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

Qualities with a lower level of total demand, such as the “efficiency of the collection exchange system” and “food safety” appear, at first glance, less important than the three qualities mentioned above. In fact, for these two qualities, differences in opinions are marked.

Most officials, from national level to communal level think that the “collection system” needs to be improved, but most farmers do not think so (and most traders do not either, except for state-owned processing companies). Since changes on this quality would require the strong involvement of farmers (building of farmers’ groups, concentration of production, contracts with traders, etc.), promoting actions to improve the “collection system” will probably prove very difficult. In fact, as far as market interactions are concerned, farmers seem to consider that if traders manage to find new customers (in other provinces, or through exports) the transactions with traders would not be a problem.

In a similar way, “food safety” is considered very important by consumers, but producers, local authorities, provincial and national officials do not pay much attention to it. The few actors who seem to share the concern are those closest to the consumers: retailers, wholesalers, veterinary and market monitoring officials (and feed producing industries). This is interesting because, while the main demand of food improvement by consumers is on food safety (demand for low fat meat is lower as confirmed by other studies – Ginhoux, V., 2001), most efforts on food quality still focus on producing low fat meat and not on improving food safety. Besides, because food safety is partly determined by farmers’ practices (through use of growth hormones, high level of antibiotics or other products with potential hazards for human health) and government officials (through laws and means for their implementation), their lack of concern on this issue will make it difficult to initiate real improvements.

Differences of perception on qualities as marked as these need to be to revealed since, if actions are to be taken on such qualities, the absence of consensus will render the involvement of some stakeholders and, therefore, the implementation difficult.

Box 17.

Stakeholders’ perceptions of the performance of the rice commodity chain in the Red River Delta, Viet Nam: a weak concern for several actors

As shown in Table 22, the qualities stakeholders perceive important regarding the performance of the rice commodity chain are rather similar to those perceived important for the pig commodity chain: the “efficiency of the exchange system after collection”, the “producers’ sale output” and the “efficiency of production at the farm level”.

Table 22. Comparison between total offer and total demand for the different qualities related to the performance of the rice commodity chain

	Col. Sys	Trd Ex Sys	Pdo efficient	Stable pdo	Food safety	Pdr sel. Out.	Other activ
Total demand	29	43	44	20	1	44	17
Ratio O/D	21%	26%	30%	20%	0%	23%	6%

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

Continued

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Box 17. (continued)

Stakeholders' perceptions of the performance of the rice commodity chain in the Red River Delta, Viet Nam: a weak concern for several actors

As shown in Table 23, there is a quasi-consensus among stakeholders to say that these three qualities should be improved.

However, farmers who sell little rice and farmers who sell rice but are not market-focused are not demanding improvement of the "producers' sale outcome". A similar situation is found for the "efficiency of the exchange system after collection". This situation may prove limiting for future change: 60 per cent of farmers sell rice, mostly in small amounts, making collection difficult and heterogeneity an important impediment for quality grading. Involvement of a sufficient number of farmers in a given area would be crucial in such a situation but may, at the same time, be difficult to obtain.

Table 23. Demands of stakeholders on qualities related to the performance of the rice commodity chain

	Col. Sys	Trd Ex Sys	Pdo efficient	Stable pdo	Food safety	Pdr sel. Out.	Other activ
Central govt.	3	4	3	1		4	2
Province	3	3	3	2		4	1
Serv. Phyto	2	1	4	4		4	
District auth.	1	2	2			2	1
Dist. Ext. Serv	1	2	3	1		2	1
Dist. Mkt Mgt	1	1	2	1		1	1
Bank	2	3	2			2	
Commune	1	2	2	1		2	1
Soentreprise	4	4		2		4	3
Wholesalers	1	4	1			3	1
Collectors		2	3	1		2	
Retailers	1	3	2	1		3	
Processors	1	1					
Consumers		2	1	1	1	1	
Fmr ri mkt	1	2	3	1		2	1
Fmr rice			2	2			
Fmr no							
Input seller			3				
Breed Cie	3	4	4			4	3
Research inst	4	3	4	2		4	2
Associations	2		1	1		3	1

Legend:

Actors

Central govt: Central government authorities
Province: Provincial authorities
Serv. Phyto.: Plant protection services (public)
District auth.: District authorities
Dist. Ext. Serv: Agricultural extension services
Dist. Mkt Mgt: Market management service
Commune: Commune and co-operative authorities
Soentreprise: State-owned rice trading and milling companies
Wholesalers: Rice wholesalers
Collectors: Rice collectors
Retailers: Urban rice retailers
Processors: Small-scale rice processors
Consumers: Urban consumers
Fmr ri mkt: Farmers selling rice and market-focused

Fmr rice: Farmers selling rice not market-focused
Fmr no: Farmers not selling rice
Input sellers: Fertilizer and pesticide sellers
Breed Cie: State seed producing company
Research inst: Research institutes
Associations: Official farmers associations

Qualities

Col. Sys.: Efficiency of the collection system (farm level)
Trd Ex. Sys.: Exchange system efficiency after collection
Pdo Efficient: Efficiency of production (farm level)
Stable Pdo: Production stability
Pdr. Sel. Out.: Producers' sale outcome
Other Activities: Work opportunities besides pig and rice

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

Continued

Box 17. (continued)

Stakeholders' perceptions of the performance of the rice commodity chain in the Red River Delta, Viet Nam: a weak concern for several actors

Similar to the pig commodity chain, farmers do not pay much attention to the “efficiency of the collection system”. This quality concerns officials of all levels (although local officials do not pay a lot of attention to it) and some traders (especially the state-owned trading and milling companies).

The problem of “production stability” does not appear to be a major concern, except for plant protection services and “food safety” for rice is only quoted by a few consumers.

Table 24. Stakeholders' concerns for the performance of the rice commodity chain measured as the total of their demands and offers on the system's qualities

	Actors' total concern	
	Demands	Offers
Central govt	17	5
Province	16	4
Serv. Phyto	15	2
District auth.	8	3
Dist. Ext. Serv	10	2
Dist. Mkt Mgt	7	1
Bank	9	2
Commune	9	2
Soentreprise	17	3
Wholesalers	10	2
Collectors	8	1
Retailers	10	3
Processors	2	1
Consumers	6	1
Frmr ri mkt	10	2
Frmr rice	4	2
Frmr no	7	-
Input seller	7	1
Breed Cie	18	3
Research inst	19	5
Association	8	3

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

A striking difference with the pig commodity chain appears in Table 24. All stakeholders do not feel a strong need for improvements in the performance of the rice commodity chain as they do for pig. In fact, improving production, trading or processing performance for rice is a concern mainly for officials at high levels (national or provincial), state-owned trading and milling companies, the seed company and research institutes. Farmers and private traders (with the exception of wholesalers, urban retailers and those farmers who are focused on the rice market) do not have much concern for the performance of the rice commodity chain in general. This situation makes it more difficult to develop changes involving multiple stakeholders.

Unveiling situations where positive collaborations are ready to emerge

As some stakeholders are willing to see qualities improved, and others want to do something to improve these qualities, areas of possible collaboration appear. In some cases, stakeholders may already be aware of the existence of these complementarities, but, very often, perception of all stakeholders being bounded, they are not aware of the presence of such potential partners or even misinterpret the actions of actors they happen to know. Hence, determining which actor would have an advantage in working with whom paves the way for improving the current situation.

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A comparison of current offers and demands of stakeholders on the qualities of the system can be used to produce this type of information. The PACT method includes a comprehensive table for this purpose. Table 25 illustrates this with the example of the pig commodity chain.

In this table, for each type of stakeholder in the first line, the value of his total demand (second line) can be compared to the complementary offers of the stakeholders in the first column. The offers of the different types of stakeholders present in the same column may not be considered cumulative as several actors can have similar offers.

Table 25 reveals that most actors in the pig chain do not easily find a match to their demands. Offers from all actors are low compared to demands, and complementary offers are dispersed among different types of actors.

However, some actors appear to have offers with comparatively high complementarities to others' demands. These are government officials at national and provincial levels, state-owned processing companies and veterinary services, but also, to a lower extent, district authorities, farmers raising many pigs, urban slaughterers-wholesalers and associations.

This leads to several important conclusions

First, the actors with the highest complementarities are mostly indirect actors: government officials, local authorities, and the official farmers' association⁸. But, for indirect actors to have an impact, actions from direct actors are needed. And currently, few of these direct actors consider that it is their role to design or implement improvements.

Second, some private traders appear to be among the direct actors with a high complementary offer to others' demand: the urban slaughterers-wholesalers. However, most actors do not perceive their potential role. From a strategic point of view, most actors view the pig (or rice) commodity chain as bipolar, with the main roles and responsibilities devoted to either officials at all levels (including state-owned enterprises) or farmers. The existence of a potentially fruitful collaboration with private traders (beside state-owned enterprises) is not known by officials or by farmers.

⁸ The farmers' association in Viet Nam should not be confused with a farmers' representative organization designed and managed by farmers. It is a body created by the communist party, along with other similar bodies (women's association, youth association, etc.).

Table 25. Complementarities between offers and demands of selected stakeholders on the qualities related to the performance of the pig commodity chain (Red River Delta, Viet Nam)

	Demands *															
Offers *	Central govt	Province	Soentreprise	District auth.	Dist. Vet	Dist. Mkt Mgt	Bank	Commune	Frmr pig>	Frmr pig< Mkt	Frmr pig<	Retailers	Associations	Consumers	Research inst	Hanoi wholes
Total dem *	20	12	13	13	14	11	11	13	11	11	6	11	10	11	17	14
Central govt		7	7	7	6	5	7	7	7	7	5	6	5	5	6	6
Province	5		5	5	4	4	5	5	5	5	4	5	4	4	4	4
Soentreprise	7	6		7	5	5	6	7	6	5	4	7	6	4	6	5
District auth.	4	4	4		4	3	4	4	4	4	3	4	3	4	3	3
Dist. Vet	7	7	6	6		6	5	6	6	7	6	6	3	5	4	4
Dist. Mkt Mgt	2	2	1	2	3		1	1	1	2	1	3	-	3	-	-
Bank	3	3	3	3	3	2		3	3	3	3	2	2	2	3	3
Commune	3	3	3	3	3	2	3		3	3	2	3	2	3	2	2
Frmr pig>	4	4	4	3	4	3	3	4		4	3	4	2	4	2	2
Frmr pig< Mkt	3	3	3	2	3	3	2	3	3		3	3	1	3	1	1
Frmr pig<	2	2	2	2	2	2	2	2	2	2		2	1	2	1	1
Retailers	2	2	2	2	2	2	2	2	2	2	1		2	2	2	2
Associations	4	4	4	4	3	3	4	4	4	4	3	4		3	4	4
Consumers	2	2	1	2	2	2	1	1	1	2	1	2	1		1	1
Research inst	3	3	3	3	2	2	3	3	3	3	2	3	3	2		3
Hanoi wholes.	4	4	4	4	3	3	4	4	4	4	3	4	4	3	4	

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

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Who can initiate a process of change? Identifying the key stakeholders

Information from institutional surveys provides more than just elements assessing the importance of a system's qualities and revealing collaboration opportunities. It also provides crucial information to identify stakeholders that have the ability to initiate significant changes in a system.

The first source of such information is provided by analyzing what each type of stakeholder is currently doing for the system's improvement and how each stakeholder is acknowledged by the others as capable of improving the system's qualities. The former relates to the existing abilities that actors have proved by their actions, which will be called "current involvement in action". The latter relates to the recognition of a formal or informal legitimacy to take action on the system's improvement, which will be called "acknowledged capacity of action". Based on institutional surveys, both can be estimated for each type of stakeholder (Jésus, 2001). Crossing this information with the offers on qualities, it is possible to assess which stakeholder is, at the same time, willing, capable and legitimate to carry out actions towards improved quality levels. Such a stakeholder has a strong chance to be a potential leader or facilitator in a process of change.

A second source of information to identify key stakeholders is provided by analyzing the intricate relations among the possible actions that the stakeholders can take in the future. In most multiple stakeholder systems, conditionality on offers happens. An actor will be ready to start actions to attain higher levels of certain qualities, but this will be conditioned by actions from another actor or by improvements on some qualities prior to his own actions. Such a situation defines "conditional offers". Conditional offers can complement the existing offers under certain circumstances: the related conditions.

Because a condition may be fulfilled by another actor, the existence of conditional offers engenders relations of interdependence among the different stakeholders. Tables can be used to formalize these interdependencies and matrix calculations used to decipher patterns within these relations. This way it is possible to estimate the global influence and dependence level of each stakeholder. This, in turn, can be used to define which actor has the ability, by his own actions, to initiate changes in what the others do i.e. which actor can be considered an initiator for future change.

Assessing which stakeholders are willing, able and legitimate to improve the system

Assessing which stakeholder is, at the same time, willing, able and legitimate to do something can be achieved in two steps. First, it is necessary to determine the "current involvement in action" and the "acknowledged capacity of action" of each stakeholder. This can be done by defining several "domains of action" for each quality. A domain of action is a group of similar actions that partly or entirely determines the level of a quality.

For a given quality and its different domains of action, information on what a stakeholder is actually doing is used to estimate his current involvement in action, and information on what the other stakeholders think this stakeholder should do is used to estimate his acknowledged capacity of action. Considering a domain of action, the first information represents the ability of the stakeholder and the second his legitimacy to start actions. Both can be aggregated to give an estimation of the global ability and legitimacy of a stakeholder over a given quality.

The second step of the process then consists of comparing these values with the offers on quality defined before.

For a given quality, if a stakeholder has, at the same time, a current capacity of action (ability) other than zero, an acknowledged capacity of action (legitimacy) also above zero and a level of offer other than zero as well, then this actor can be considered as willing, able and legitimate to do something for the improvement of this quality. The PACT software proposes a table summarising such information for each type of stakeholder and each quality by multiplying together these three indicators⁹. If any of the three has a null value, a null result prevails, whereas high values of any of the three indicators give high values of “voluntary and accepted capacity of action” (the illustration in Box 18).

Values of “voluntary and accepted capacity of action” distinguish the stakeholders who can play a key role in a process of change of the studied system.

Box 18.

Determining willing, able and legitimate stakeholders

*Results concerning the qualities related to the performance of the pig commodity chain
(Red River Delta, Viet Nam)*

Using information from the institutional surveys on current actions as well as forecasted and awaited ones, nine domains of action were defined for the “efficiency of the exchange system after collection”. All these domains of action affect and determine the “efficiency of the exchange system after collection”:

- Prospecting market opportunities (urban, inter-provincial, and export markets).
- Involving farmers and co-operatives in pig trading.
- Improving the generation and broadcasting of information on markets.
- Developing and improving processing and storage facilities.
- Easing and improving the circulation of goods (relates to transportation laws and controls).
- Improving the quality of processed or traded pig products.
- Improving traders’ relationships (especially concerning credit between traders).
- Improving state-owned companies competition abilities.
- Investing in trade and processing.

For each domain and each stakeholder, a level of acknowledged capacity of action can be estimated based on institutional surveys. Aggregating the results for the whole quality “efficiency of the exchange system after collection” gives the figures shown in Table 26. There, four types of stakeholder appear to be the most legitimate to take action towards improving the pig exchange system after collection: state-owned processing enterprises, private pig wholesalers, the central government and the urban wholesalers-slaughterers.

Continued

⁹ Actually, the legitimacy is evaluated by the difference between what should be done by a stakeholder and what he is currently doing (i.e. his acknowledged capacity of action minus his current involvement in action).

Box 18. (continued)

Determining willing, able and legitimate stakeholders

Table 26. Acknowledged capacity of action (legitimacy) of stakeholders concerning the “efficiency of the exchange system after collection”

Acknowledged capacity of action	
Central govt.	17
Province	1
Soentreprise	22
Wholesalers	18
District auth.	5
Dist. Ext. Serv	1
Dist. Vet	2
Dist. Mkt Mgt	-
Bank	3
Commune	10
Fmr pig>	8
Fmr pig< Mkt	8
Fmr pig<	8
Farmer piglet	8
Retailers	6
Slaughterers	6
Collectors	6
Associations	-
Consumers	-
Feeding trader	-
Feeding indust	-
Breed Cie	-
Research inst	-
Hanoi retailers	5
Hanoi wholes	16

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

Table 27. Acknowledged capacity of action (legitimacy) on the domains of action determining the “efficiency of the exchange system after collection”

Acknowledged capacity of action over	
Search market	31
Farmer in trade	8
Information	4
Process-storage	14
Circulation	4
Product quality	14
Actors’ relationship	15
SOE efficient	10
Invest	3

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

According to Table 27, these four stakeholders would be legitimate to focus on prospecting urban, inter-provincial, and export market opportunities, improving relationships among traders’ (especially concerning late payments among private traders), developing and improving processing and storage (refrigerated storage) facilities and ensuring improvement in the quality of processed and traded pig products.

Among the stakeholders legitimate to take action on the quality “efficiency of the exchange system after collection”, Table 20 (p. 58) showed that only a few are willing to do something: those with offers other than zero.

Crossing information on legitimacy with information on offers allows assessing which actor is both willing and legitimate to take actions for change. This result is presented in Table 28. There, for the quality “efficiency of the exchange system after collection”, the highest scores are found for the same four legitimate stakeholders defined within Table 26, but the integration of information on offers provides a new insight on their situation: the potential role of private wholesalers and of the central government appears more important because of a higher willingness to get involved.

Continued

Box 18. (continued)

Determining willing, able and legitimate stakeholders

More information can be found in Table 28 concerning the other important qualities of the system. It shows that (1) to improve the “producers selling outcome” the most willing and legitimate actors would be farmers producing many pigs, and co-operatives, (2) to improve the “efficiency of production” veterinary services, piglet producers, and co-operatives have the highest will and legitimacy, and (3) to have more “stable production” the most willing and legitimate actors are the veterinary services, the co-operatives and the pig producers.

Generally, it appears that for more market oriented pig raising, as for higher pig raising efficiency, co-operatives, local agricultural services and farmers are perceived as the key stakeholders through which changes can happen.

Table 26. Voluntary and accepted capacity of action for all qualities concerning the performance of the pig commodity chain^a

	Col. Sys	Trd Ex Sys	Pdo efficient	Stable pdo	Food safety	Pdr sel. Out.
Central govt.	5	34	12	4	-	8
Province	1	1	5	7	-	3
Soentreprise	11	22	1	-	-	6
Wholesalers	-	36	-	-	-	-
District auth.	-	5	1	6	-	1
Dist. Ext. Serv	-	-	11	-	-	8
Dist. Vet.	4	2	18	28	11	-
Dist. Mkt Mgt	-	-	-	-	-	-
Bank	-	3	12	-	-	-
Commune	-	-	16	15	-	13
Frmr pig>	-	-	9	14	-	16
Frmr pig< Mkt	-	-	10	14	-	-
Frmr pig<	-	-	10	7	-	-
Farmer piglet	-	-	20	7	-	-
Retailers	-	12	-	-	-	-
Slaughterers	2	6	-	-	-	-
Collectors	-	6	-	-	-	-
Associations	-	-	1	-	-	-
Consumers	-	-	-	-	-	-
Feeding trader	-	-	-	-	-	-
Feeding indust	-	-	2	-	-	1
Breed Cie	-	-	-	-	-	-
Research inst	-	-	-	-	-	1
Hanoi retailers	-	5	-	-	2	-
Hanoi wholes.	9	16	1	-	-	3

^a Since all qualities do not have the same number of domains of action, figures in this table cannot be compared between columns. Only comparisons of values for different stakeholders in the same column bear sense.

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

As demonstrated with this example, it is possible to identify the actors through which changes should happen. A different technique can be used to identify which stakeholder can initiate or trigger changes in the other actors’ behaviour. This technique uses information on the conditional offers.

Identifying which stakeholder can initiate conditional changes

Conditional offers estimated with the institutional surveys (... defines “conditional offers”, p. 64 and Jésus, 2001) can be used to determine the respective influence and dependence of each stakeholder. When an actor’s involvement depends on prior actions from a specific stakeholder, there is a direct relation of dependence, which is quite obvious and can be estimated. When an actor sets conditions for his higher involvement in action on the state of the

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system, which, itself, is related to the status of one or several qualities among those defined in the institutional analysis, it can be inferred that this actor is dependent on the stakeholders who can improve the concerned qualities i.e. those who have offers on the improvement of qualities (... , defines a “quality offer”, p. 56).

This way, it is possible to estimate the influence of stakeholders on one another for the occurrence of the conditional offers. The resulting information is used to design a table similar to Table 29 where values between 0 and 3 are entered depending on whether a stakeholder has a strong influence (valued 3) or no influence (valued 0) on another stakeholder.

Table 29 shows results obtained with the institutional surveys on the performance of the pig commodity chain in the Red River Delta. This table is the first step in analyzing influences of stakeholders on one another; it presents an appraisal of the direct influences.

Table 29. Influence of stakeholders on each other’s potential offers concerning the improvement of the pig commodity chain^a (Red River Delta, Viet Nam)

OF * ON*	Central govt	Pvce	Soentreprise	Wholesalers	District auth.	Dist. Ext. Serv	Dist. Vet	Dist. Mkt Mgt	Bank	Commune	Fmr pig>
Central govt		3	3	1	1	2	2	1	3	1	1
Pvc	2		1	1	3	3	3	1	2	1	1
Soentreprise	1	1		2	1		1	1	2	1	2
Wholesalers	1	1	2		1		1	1	1	1	2
District auth.		2		1		1	2	2	2	3	1
Dist. Ext. Serv	1	1	1		1		1			1	1
Dist. Vet	1	1	1	1	1	1		2		2	2
Dist. Mkt Mgt	1	1	1	1	2		2			1	
Bank	1	1	2	1	1	1	1			1	1
Commune			1	1	1	1	2	2	3		2
Fmr pig>			2	2		1	1		1	2	

^a This table is an excerpt of the whole table which contains information on the influence of all the 25 stakeholders defined for this system.

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

The second step deals with indirect influences. Within chains of interaction, if A directly influences B and B directly influences C, then A indirectly influences C. These indirect influences can be taken into account to appreciate the real total influence and dependence of each actor.

To do so, matrix calculation is used (Godet, 1991). The level of indirect influence can be accessed by multiplying the direct influence table, considered as a matrix, by itself. This can be done using the PACT software. The process is reiterated to produce a table presenting the second level of indirect influence (A influences D, because A influences B, who influences C, who influences D) and reiterated again until the process shows no more indirect effects. At that point, direct and indirect influences are summed for each pair of stakeholders (for instance, the direct influence of district authorities on pig producers can be added to the indirect influence of district authorities on pig producers, etc.) to define the total influence of actors on one another (see Table 30).

Table 30. Total influence of actors on each other's potential offers concerning the improvement of the pig commodity chain^a (Red River Delta, Viet Nam)

OF * ON*	Central govt	Pvce	Soentreprise	Wholesalers	District auth.	Dist. Ext. Serv	Dist. Vet	Dist. Mkt Mgt	Bank	Commune
Central govt	2	4	5	3	4	5	5	2	5	2
Pvce	3	2	3	2	4	4	5	3	4	4
Soentreprise	2	2	2	3	2	1	2	2	3	3
Wholesalers	2	2	4	1	2	1	2	2	2	2
District auth.	1	3	1	2	2	3	4	4	5	4
Dist. Ext. Serv	2	2	2	1	2	1	2	1	1	2
Dist. Vet	2	2	2	2	2	2	1	3	2	3
Dist. Mkt Mgt	2	2	2	2	3	1	3	1	1	3
Bank	2	2	3	2	2	2	2	1	1	2
Commune	1	1	3	2	2	2	3	3	4	1
Fmr pig>	1	1	4	3	1	2	2	1	3	3

^a This table is an excerpt of the whole table which contains information on the influence of all the 25 stakeholders defined for this system.

Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

In this table, the sum of the values by row defines the total global influence of one stakeholder on the others, and the sum by column defines his total global dependence. Table 31 illustrates the results of the process using the above tables as inputs.

Table 31. Total global influence and dependence of actors on each other's potential offers concerning the improvement of the pig commodity chain (Red River Delta, Viet Nam)

Total global influence		Total global dependence	
Central govt.	52	Central govt.	21
Pvce	49	Pvce	26
Soentreprise	37	Soentreprise	39
Wholesalers	36	Wholesalers	31
District auth.	45	District auth.	29
Dist. Ext. Serv	23	Dist. Ext. Serv	30
Dist. Vet	40	Dist. Vet	41
Dist. Mkt Mgt	31	Dist. Mkt Mgt	30
Bank	30	Bank	43
Commune	40	Commune	41
Fmr pig>	35	Fmr pig>	40
Fmr pig< Mkt	27	Fmr pig< Mkt	38
Fmr pig<	25	Fmr pig<	34
Farmer piglet	32	Farmer piglet	43
Retailers	17	Retailers	35
Slaughters	27	Slaughters	37
Collectors	25	Collectors	48
Associations	23	Associations	29
Consumers	24	Consumers	24
Feeding trader	30	Feeding trader	40
Feeding indust	19	Feeding indust	30
Breed Cie	26	Breed Cie	33
Research inst	18	Research inst	23
Hanoi retailers	15	Hanoi retailers	23
Hanoi wholesalers	18	Hanoi wholesalers	24

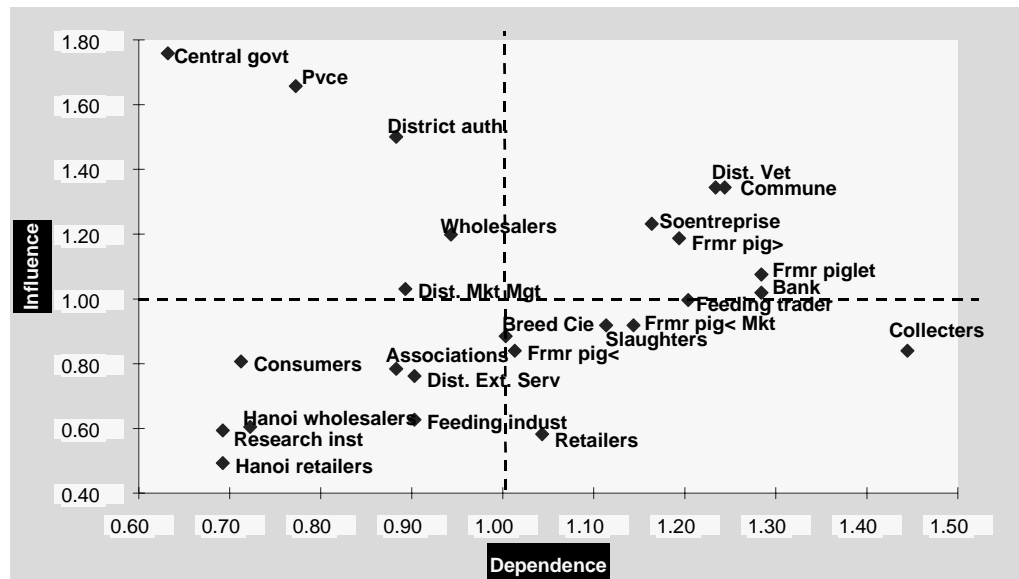
Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

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These indicators can be used to plot, on a chart, each type of stakeholder according to his total global influence and dependence. On such a chart, it is possible to visualize the potential role each stakeholder can play in triggering the materialization of conditional offers. Actors with a high influence and a low dependence are potential change initiators and, by comparison, those with a low influence and a high dependence are likely to just follow a process initiated by others.

Figure 13 illustrates the type of chart that can be obtained using the example of the pig commodity chain¹⁰. It shows that the most influential and least dependent stakeholders (in the upper-left part) are the central government, the province and the district authorities and the wholesalers. Materialising conditional offers would make the global situation better (more opportunities for collaboration and more actors ready to improve the performance of the commodity chain) and these three stakeholders appear to be those who can start such a process.

Figure 13. Importance of stakeholders for the materialization of conditional offers concerning the performance of the pig commodity chain (direct and indirect influences)



Source: PACT analysis of interviews conducted by the authors and the team of Vietnamese scientists from VASI (2000).

This chart also reveals clearly that most stakeholders on this graph are situated on an oblique line starting from the less dependent and less influential actors towards the most influential and dependent ones. Some analysts consider that such a situation is unstable (Godet, 1991). Stakeholders situated in the lower-left part of the graph do not appear to have an essential role in the materialization of conditional offers. But an important group of stakeholders, situated in the upper-right part of the graph, has both a high level of influence and a high level of dependence.

In this case, although the three strongest stakeholders defined above have a clear leading role, the effective materialization of conditional offers depends on a group of actors who appear

¹⁰ The figures used in the chart have been formatted to have a similar scale for influence and dependence so that average values will appear to be equal to one.

to be very inter-dependent. Therefore, success in making change happen would probably depend on an effective collaboration and co-ordination process defined with these stakeholders.

The preceding examples illustrate a typical view of stakeholders in the Red River Delta for whom the State (i.e. the government and the local authorities at all levels) is the actor from which changes should come. This can come as a surprise: in the late 1980s, the centrally planned socialist system gave way to a competitive market economy. This withdrawal of State intervention led to a phase of rapid and successful development but today, actors still consider that State intervention is the main way to solve existing problems (Jésus, 2000).

This, however, should not be misinterpreted. Facing problems where multiple actors are involved, stakeholders in the Red River Delta are reflecting upon what they have already experienced to conceive solutions. Collaborative action among actors is badly tainted since it is associated with production co-operatives, which failed to provide sufficient food and revenue to their members in the 1970s and 1980s (Jésus and Thê Anh, 1998). On the contrary, through the success of the liberalization reforms of the late 1980s, the government showed that public action could lead to interesting results. Consequently, for stakeholders of the Red River Delta, action of the State appears to be the only known alternative to solve problems going beyond individual decision.

To say that the State should play a leading role is not sufficient. It does not help define how stakeholders' interdependences should be dealt with and how the potential key role of private traders, revealed by the previous analysis, can be used and co-ordinated with State actions. For this policy arena, workshops are required (p. 82).

Complementing the results obtained on technical and economic stakes, institutional analysis with the PACT method can help the organization and co-ordination processes of a public decision. First, knowing where consensus are help promote a constructive dialogue among stakeholders and knowing where divergences lie enable to avoid focusing discussions on sterile confrontations. Second, identifying the complementarities that can be achieved among stakeholders pave the way for collaborative actions, while uncovering situations where the lack of willingness hampers improvements facilitates the identification of potential pitfalls in a process of change. Third, revealing the potential key role of stakeholders in a process of change can help design and implement these changes and the associated co-ordination process necessary.

Conclusion

The generation and analysis of information presented in this chapter helps finding new possibilities of improvement for the situation studied. It provides a base to craft new strategies of change. Technical and economic stakes uncovered can be used to define feasible targets and to avoid unworkable ones. The identification of socio-institutional stakes proposes means to render constructive discussions possible, reveals areas where collaboration has good reasons to occur, identifies key actors to initiate changes and proposes paths of action to take advantage of the existing networks of interactions.

Generating and revealing important stakes is not sufficient, though. The fact that these possibilities have not been discovered and used yet is not to be evaded. It derives from the imperfect perceptions of stakeholders. Actors with bounded information run the risk of designing non-optimal strategies based on false presumptions.

This means that there are potential gains to be tapped in making perceptions more complete through better information. Expanding stakeholders' perception of reality can help them improve the relevance of their everyday decisions. It can impact positively on the outcome

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of their choices and also on the interactions they have with one another. By improving stakeholders' information, action efficiency can be improved and so can be public decisions and reactions to these decisions. Generating and revealing information therefore appears to be a potential source of gains, or losses, a third type of stake, directly linked with the policy management process.

To make the most of these potential gains, methods are needed to make it possible for stakeholders to use this information in a constructive way. Doing so entails several implications. First, information should be shared. Stakeholders of all types and all levels should have access to it. Second, information should be made valuable to stakeholders for them to use it. Knowledge provided by outsiders is not always considered and less often actually used because actors may not sense or believe it is valuable. Information acquired through direct experience generally has higher significance because there have been opportunities to test it. Stakeholders' implication in information generation, validation and discussion is thus crucial. Third, information in itself is not sufficient to design and apply new public decisions. Proper exploitation of this information to design changes with the participation of stakeholders is a task in itself.

Based on the information generated with the tools presented in this chapter, participation and involvement of stakeholders in the decision-making and implementation processes can be achieved. It requires specific methods and skills that will be presented in Chapter IV.

Chapter IV

Promoting Interaction as a Process for Policy-Making

The preceding Chapter II and Chapter III highlighted the importance of problem definition, stakeholder identification, and stake characterization in the process of policy formulation. Various concepts have been discussed and tools proposed. They provide knowledge and methods to make it possible for the content of a policy to be defined based on the needs and capacities of the various stakeholders.

However, as stated previously, a tool will not help achieve efficient policy formulation if it is used in a way that does not allow stakeholders to be active members in the policy-making process. The decision-making process itself is a crucial component of the policy. Therefore, methods promoting interaction for stakeholder participation and involvement are needed.

At the same time, an interactive process, in itself, may not necessarily result in an effective policy. Policy content matters as well. In fact, the frontier between tools for analysis and tools for interaction cannot be rigidly set in practice. Tools for analysis are not neutral with regards to how they can be implemented and the implementation processes cannot be fully dissociated from the type of tools used for analysis.

Thus, tools and methods for representation, simulation or exploration such as those proposed in this document (Chapter II and Chapter III)¹ should incorporate, in their design and implementation, features that permit the development of interactive participation and involvement of stakeholders.

In the first section of this chapter we will discuss the issues that lie behind the involvement of stakeholders in policy definition. In the following two sections, practical methods will be proposed to tackle these issues. They will be illustrated with experience gained through the work undertaken during the Ecolpol project.

Tools for interaction – the issues of participatory policy-making

In most developing countries, interaction among stakeholders or genuine stakeholder involvement in the process of policy formulation and decision-making are not common practices, despite a growing demand and pressure from previously excluded groups or citizen associations. A traditional top-down decision-making process still largely prevails, reflecting the use of centralized procedures uniformly applied on a diversity of situations. However, these procedures cannot solve all problems. Defining a policy to help solve the problem of market access for farmers in the Red River Delta is different from establishing measures to help increase poor rural household income in West Java. Each problem is unique and has to be tackled through a specific process that takes into consideration the local features, both in terms of problem investigation and modes of stakeholder participation (Brinkerhoff, 1996b).

There are many ways stakeholders may participate in policy-making, ranging from manipulative to self-mobilization as indicated in Pretty's typology of participation (Pretty, 1995). In the method proposed in this book, the objective is to transform traditionally top down policy processes, where government officials decide and impose reforms, into an approach where the views of all important stakeholders are taken into consideration, aggregated and made accessible to all other parties to build a common vision and establish a meta-decision (Chapter I:

¹ See also Chapter V concerning simulation and exploration.

Policy: from a collective good ... , p. 11). For this purpose, what is needed is interactive participation, defined as a process where “people participate in joint analysis, development of action plans and formation and strengthening of local institutions. Participation is seen as a right, not just as a means to achieve project goals. The process involves interdisciplinary methodologies that seek multiple perspectives and make use of systemic and structured learning processes” (Pretty, 1995, p. 1252).

This change in the way policies are formulated is an institutional change: “policy reform begins with rule change” (Oakerson, and Walker, 1997, p. 40). As such, since institutions are “path dependant” (Baslé, 1997), it depends not only on the intended results and the specific problem, but also on the existing rules. This means, on one hand, that any new reform should integrate well with the existing policies and procedures as well as with the behavioural patterns of the stakeholders. On the other hand, only stakeholders can make this change happen, in particular by changing their own institutional arrangements, by changing the way they interact.

As will be shown later, this has two implications in terms of methods for promoting stakeholder involvement in policy-making. The first is that information becomes a key issue. The second is that opportunities for stakeholder involvement must be provided along with generation and sharing of this information.

Information generation and sharing

The need for information generation is rooted in the fact that in multiple stakeholder systems, that are complex by nature, no stakeholder has an all-embracing knowledge of the system and of the other stakeholders. Each individual or group of stakeholders only controls and is aware of a limited part of the whole system. This partial availability and asymmetry of information puts at risk the efficiency of individual decisions but also, at a different level, the quality of policy formulation. It can cause decision failure.

Information influences more than just the content of the decision, it also influences institutions and institutional changes. Better or additional information modifies stakeholders’ perceptions, which in turn changes their individual decisions, including the way they interact with other stakeholders. Therefore, it changes the institutions in which they operate. As Melody states, “it is the patterns of interaction that maintain an institution, and changes in patterns of interaction bring about changes in institutions. The essence of this interaction is the communication of information” (Melody, 1988, p. 363). Insufficient and asymmetric information can thus limit the establishment of agreements among stakeholders. Similar to the way asymmetric information among buyers and sellers may cause market failure, partial and asymmetric information may induce collaboration failure.

Looking on the bright side of the problem, it also means that information can be used to improve the process of public decision through stakeholder mediation. It can be used to promote stronger participation of stakeholders in the decision-making processes and constructive changes in institutions. To achieve this, however, information generation is not sufficient, it must be associated with information sharing.

In the process of policy-making, when the objective is to define and implement efficient decisions leading to specifically expected results, concealing information is counterproductive. Sharing information is the only answer to fight against the temptation to use information in a confidential way. When information is known by all stakeholders it loses its economic value and gains a social value in a collective sense. Interactive generation and sharing of information is thus a crucial activity for efficient policies (Brinkerhoff, 1996a).

This may appear to be an obvious component in public decision-making processes such as policy formulation, however, information is often handled as a private good because its scarcity gives it a high value and provides an advantage to those who have access to it. For

information to become a factor of change in the way a policy is made and people participate, it must be recognized by all parties as a public good (Melody, 1988; Newbery, 1989), which means that it can be accessible to all and therefore, should be shared.

But this is not all; by sharing information, new perceptions of the current situation are created and they may lead stakeholders to recognise that the current institutional arrangements, among which are the procedures for public decision-making, no longer suit this situation and that changes are needed. This may occur, for instance, if new information is provided to the stakeholders showing that the point of view of specific groups was not taken into consideration in the decision-making process, although their role is determinant for its success.

This implies that beside the need for tools helping to build more accurate and strategic representation of the system (Chapter II and Chapter III), there is also a need for methods to involve stakeholders in the generation and circulation of that information.

Stakeholder involvement in decision-making

As indicated above, information generation and sharing contribute to modify stakeholders' perceptions and may induce changes in the way policies are made. However, information generation and sharing are not always sufficient to ensure the involvement of the stakeholders; opportunities for interaction must also be provided.

The question, then, is how stakeholders became involved in policy definition. Since participation cannot be enforced, clearly the answer comes from the stakeholders themselves, from their willingness to make changes happen. The point is that, besides the role information can play, there must be some catalyst, a starting point where opportunities are created for the stakeholders to access the policy-making process. We advocate here that it is the role of the policy analyst involved in policy-making to provide these opportunities.

Organization of stakeholders meetings is a first step. The World Bank's experience with participatory approaches (World Bank, 1996) for development clearly shows that meetings are fundamental, either through workshop-based methods (using techniques like 'Objectives-Oriented Project Planning' or 'Team Up'), community-based methods (Participatory Rural Appraisal) or stakeholder consultation ('Beneficiary Assessment', 'Systematic Client Consultation'). In these approaches, stakeholders meet with each other and discuss common specific issues.

However, meetings are not sufficient if they do not provide the possibility to elaborate a common language and do not result in the acceptance of the stakeholders to work together. This is not easily done since co-ordination problems often occur, in particular when stakeholders feel that their autonomy is likely to be threatened or when there is a lack of consensus about the task to perform (Brinkerhoff, 1996a). This implies, in particular, that a set of rules has to be set up by, and with, the stakeholders attending these meetings, in order to minimise the threat, establish a common language and define shared objectives.

However, attention should be given to the fact that too strong integration and interdependencies may block the evolution of the policy dialogue. Somehow, paradoxically, best results (in terms of commitment) seem to be achieved when the possibility is left for the stakeholders to withdraw at their discretion. Thus, arrangements for stakeholder participation must be designed in a flexible and adaptable way, since actors may not bother to participate if a structure can continue functioning without their participation.

In the following section we will describe how the problems of generation and sharing of information by the stakeholders in policy formulation have been dealt with within the framework of the Ecopol project.

Tools for information generation and sharing

When stakeholders only know a limited part of the system they are dealing with, this is a situation of incomplete information leading to individual decisions that will not provide the best results for the individuals or for the system. This is a dual problem. On one hand, only partial information is available at each actor's level, and on the other hand, there is no aggregate view of the whole system that is available for all. Expert meetings can be used to cope with the problem of aggregating partial knowledge from various stakeholders, and "validation meetings" can be used to cope with the problem of sharing the information for all. Combining the two will help build and disseminate a common vision of the system, its evolution and possible actions to undertake.

Expert meetings

An expert meeting is an approach that promotes interaction among stakeholders by giving them the opportunity to express their views, listen to other actors' points of view and discuss them. It is a participatory approach for collective analysis (Pretty, 1995). It relies on the assumption that it is possible for people with very different backgrounds and knowledge, but all with interest in the same system, to meet and interact so that from the interaction process a common vision can emerge with sufficient clarity. The experts are a selected group of stakeholders' representatives who know about the system under analysis.

Expert meetings particularly fit the first steps of policy formulation such as problem definition, stakeholder identification, and functional characterization of the system. They are useful to quickly generate information. In the Ecopol project, various expert meetings were conducted on the following topics:

- The making of a sub-district typology in the southern part of West Java, with the participation of scientists and analysts from various research and development institutions in this province (Box 19).
- The building of a pre-typology of poor rural households in the same area (Box 5, p. 22). Combined with the former typology, this helped to define the priority area of intervention for the local authorities and to identify the priority target groups for local rural poverty alleviation measures in this part of the province.
- The identification of liberalization measures in the rice sub-sector in Indonesia with analysts from the Ministry of Agriculture and from research and development institutes.
- The building of a rice and pig farmer typology in the Red River Delta with the participation of farmers, traders, local authorities and scientists.
- The representation of the relationship prevailing in the rice and pig commodity chain in the Red River Delta with the participation of farmers and traders from different levels (Box 6, p. 26).

The success of an expert meeting in providing useful and new understanding depends on several organizational aspects. These are related to the selection of participants, the quality of guidance and the use of instruments to facilitate interaction among participants.

On the selection of individual participants

Expert meeting participants are expected to bring practical and real knowledge concerning the system. Thus, criteria for selecting these participants include geographic coverage, subject matter knowledge, institutional affiliation, and socio-economic characteristics. The capacity to re-transmit information and meeting results to stakeholders is also an important

criterion of choice. A preliminary consultation with the possible participants about who else could be consulted and invited is a useful approach, since it helps select people on the basis of multiple opinions, avoiding reliance on the exclusive perception of an individual such as the programme or project leader or a dominant policy maker.

The number of participants is also an important issue. There is a compromise between a high number of participants and the quality of each participant's input in the process. The more the participants the less each of them will talk and the more difficult it will be to reach agreement in an interactive way. On the other hand, the fewer the participants and the less different the points of view to be discussed, the more likely biases or incomplete information will prevail. Practical experience shows that eight to ten people is a manageable total for a working group with quality and useful results. However, several expert meetings may be conducted on a geographical basis, for instance, in the case of contrasting situations in a system, but then they must be followed by validation meetings to ensure the quality of a subsequent aggregated complete representation.

Participants must also be selected according to "psychological" criteria. Since interaction is also sought in the expert meeting, priority shall be given to people who combine both knowledge and openness in discussion and acceptance of other opinions. However, the expert meeting must be open to people independently of their education or literacy level. In fact, some important stakeholders in development policies may have no formal education or be illiterate and omitting them from expert meetings could result in nobody being aware of their situation and perception. This implies including special support for the participants who need it for reading, writing or speaking the language used during the work in order to have them fully involved in the process.

Box 19.

Combining an expert meeting and statistical analysis in mapping southern West Java districts

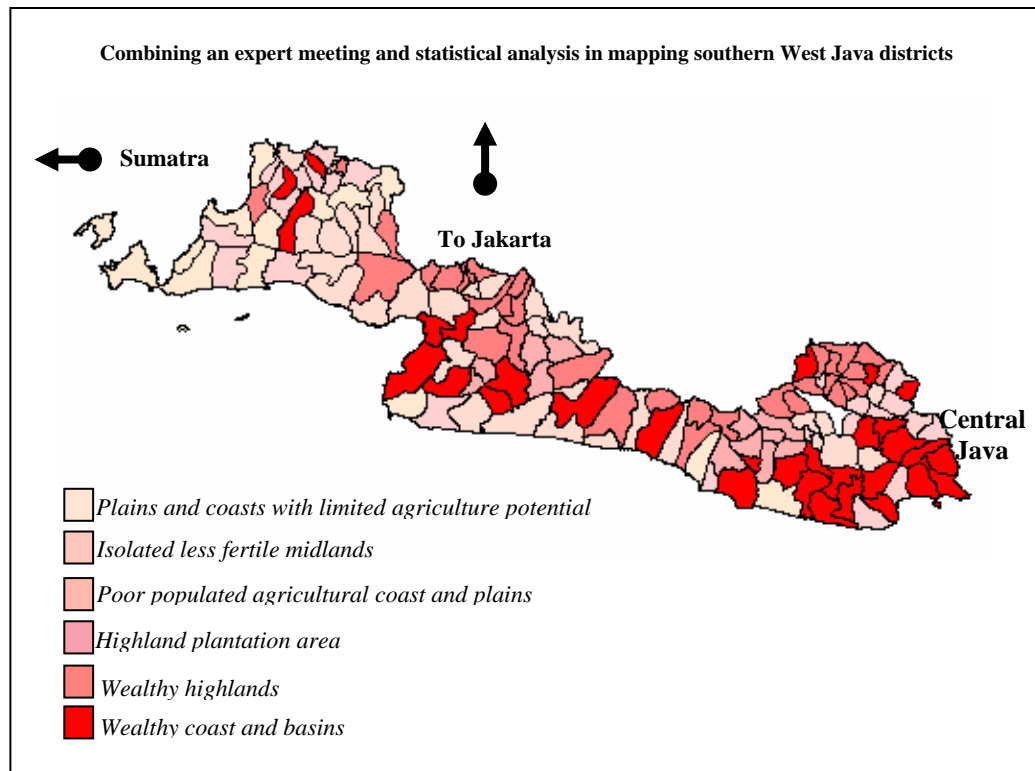
An expert meeting was organized in order to identify criteria for establishing a typology of the districts forming the southern part of West Java province. The participants were the Indonesian members of the Ecolpol team, scientists and analysts from local research, development or planning organizations with extensive knowledge of the region. They classified the districts according to two main types of characteristics: geographic conditions and infrastructure development. Under geographic conditions they specified two main criteria: altitude and slope, while infrastructure mainly related to the availability of electricity, the development of roads and the proximity of markets.

Simultaneously, statistical analysis tools were used to try to define a typology of 146 districts with about 50 variables related to topography, climate, infrastructure, health and agriculture. Unfortunately statistical classification kept producing a very large, undifferentiated group of more than 100 districts and small groups of one or two. Hierarchical cluster analysis was then used in order to dissociate the biggest group. Altitude and the percentage of households with access to power supply came out as the two criteria that permitted to split this group.

The output of the expert meeting conducted in a half-day period was totally consistent with that from a sophisticated statistical analysis that took several days of trial and error before yielding consistent results. The map of the district distribution below was elaborated on the basis of this combined expert meeting/statistical analysis approach and was used to select the research sites for fieldwork.

Continued

Box 19. (continued)



On the guidance during the meeting

Expert meetings are conducted under the guidance of a neutral resource person who is not a stakeholder. This person plays a crucial role. He/she has to conduct the meeting step by step without interfering in the content, making sure that all participants are given an equal opportunity to intervene, and that the basic steps and rules are understood, agreed upon and followed. The move from each step to the next should only occur after an agreement has been reached among all group members. The resource person must ensure also that records are kept from each step with the help of another person acting as a secretary. The resource person must have practised guiding an expert meeting. The Ecopol project provided special training experience for future resource persons using a case simulation approach. These training exercises proved to be sufficient for the trainees to start their own activities.

On materials and funds

Materials to help visualize the discussion process, outputs and agreements are needed. They help participants develop their own ability to express their opinions or to focus on multiple dimensions. The use of computers and cabled projection devices is not an obstacle. On the contrary, experience shows for instance that illiterate farmers understand very well the symbols and pictures used in computer programs (Lynam *et al.*, 1999). Besides these sophisticated tools, other visualization techniques can be used to facilitate interaction. They include boards, charts, colour cards, markers, adhesive tape, and magnets. The meeting must be held in a conveniently sized room arranged to fit the number of participants, so that they can both easily look at the results and interact. U-shaped configurations most effectively serve both purposes.

Expert meetings have a cost. This cost includes fares for the participants, materials and accommodation if needed. This is a trade off for making information more reliable and more available. It must be weighed against the cost of not providing any opportunity to improve the common knowledge on the system and of not sharing it among stakeholders as far as policy formulation is concerned. We argue here that this cost is small compared to the potential cost of ineffective policy measures. Thus, enough provision should be forecast in the process of policy formulation for developing interactions with stakeholders.

The expert meetings make it possible to involve stakeholders in the early stage of policy reform or formulation, when these meetings are used for the identification of the problem, identification of stakes and stakeholders. The expert meeting method contributes not only to overcoming the problem of partial information by providing the opportunity to aggregate information and to create new information, it also participates to the sharing and broadcasting of this information (to be completed with other more usual means of information diffusion) and it brings stakeholders to work together.

Validation meetings

Information obtained from expert meetings (as well as information obtained by other means) must be further discussed in order for the inputs and results to be validated with and disseminated to a larger number of stakeholders. It can be combined with other data coming from various sources, such as institutional and socio-economic individual surveys, participatory appraisals, review of literature or on-going research. It results in the generation of a new knowledge that has to be shared.

For this purpose, traditional means of circulation of information such as reports and other written documents must be complemented with other media. The involvement of stakeholders with different backgrounds and experiences cannot rely only on their ability to read and comment on written information. For this reason, the Ecopol project included validation meetings as another means for circulating and generating information. These meetings relate to the concept of niches defined as “platforms, for multi-stakeholder reviews and decision-making” (Alsop and Farrington, 1998, p. 257). They are recommended to overcome common failure linked to asymmetric information leading to opportunistic behaviour similar to that encountered in the functioning of incomplete markets.

Validation meetings are used to cope with the need to keep involving the stakeholders in the decision-making process. They allow extension and discussion of intermediary results with a greater number of stakeholders, thus avoiding biased analysis. The purposes of validation meetings are therefore multiple: they help validate the new information, they contribute to making this information available to stakeholders and, by allowing these stakeholders to be together and discuss the same thing, they also contribute to progressively constructing a common vision or representation of the system, step by step, with the stakeholders.

The organization of the validation meetings is adapted from the technical workshops used in the CADIAC approach (Bourgeois and Herrera, 2000). As for expert meetings, the organization pattern of validation meetings is critical for their success.

On preparation and participants

An important element is the provision of information to the participants prior to the meeting. This information set includes an explanation on the purpose of the meeting and documents with the information to be discussed. These should be available at least two weeks before the date of the meeting.

The number of participants should be around thirty. If it is desirable to invite more people in the discussion, several meetings can be held at different places.

On interaction

After the information has been presented, work groups are formed to discuss the results. The output of the group work is an assessment of the relevance of the information and a contribution to improve its content. For this purpose, each group is made up of six to ten people, with one spokesperson. As far as possible, different viewpoints must be represented in each group so that these groups will not focus discussions on the unique biased and shared opinions of the members, but will provide another opportunity in the framework of the validation meeting for stakeholders to interact on a more personal basis. The outcomes of the work of the groups are discussed in a full session in order to reach a general consensus on the topic discussed, in particular the relevance of the information.

On guidance

As for expert meetings, guidance of the validation meeting is a key issue. A neutral moderator is needed. This person must be selected so that all the stakeholders present recognise his/her capacity to conduct the meeting and facilitate the discussions. Usually, the resource person comes from the team of analysts that is in charge of providing technical assistance to the process of policy formulation. However, one must ensure that the moderator or the organization he belongs to is not an important stakeholder for the issues at stake in the meeting.

Similar to expert meetings, validation meetings facilitate the process of involving and increasing stakeholder participation in the policy-making process as will be discussed in the next section. The following box highlights experience of validation meetings in the case of the rice and pig commodity chains in the Red River Delta (Box 20).

Box 20.

Validation meetings on the performance of rice and pig commodity chains in Viet Nam

At the end of 1999 and the beginning of 2000, validation meetings were organized to present and discuss the information collected and analyzed on the technico-economic characteristics of the performance of the pig and rice commodity chains.

In order to share and discuss this information with all stakeholders, these meetings had to allow for the participation of local actors, national officials and all stakeholders at the intermediary levels. For practical reasons, it was decided to organize a series of validation meetings at the local level, one for each of the four districts surveyed and a meeting at the national level. For the former, farmers, traders, local authorities and representatives of local organizations were invited. For the latter, government officials from various ministries, representatives of central agencies and organizations as well as researchers, analysts and leaders of project development were invited. In addition, representatives of the provincial and district authorities were present at both types of meeting to create a link between the two levels.

Each validation meeting was organized in a similar way. For the preparation phase, documents presenting the objective of the meeting, its agenda, as well as the different results to be discussed were sent in advance to the different persons who had been invited. Moreover, special attention was paid to make sure that a representative of each type of stakeholder would be attending.

Each meeting began with a presentation of the results concerning the production segment of the commodity chains (classification of farmers, characteristics of each type, problems of farmers for rice and pig production, for rice and pig selling, etc.). It was followed by a presentation of the results on the marketing and processing segment (main marketing circuits, distribution of costs and margin along the chain, problems faced by traders, etc.). At the end of each presentation, a discussion was organized with the participants on three points:

- ✓ The accuracy of the results presented.
- ✓ The important elements that were missing in the analysis.
- ✓ The elements that needed some clarification by the participants.

Continued

Box 20. (continued)

Validation meetings on the performance of rice and pig commodity chains in Viet Nam

The first point led to a unanimous recognition of the accuracy of the results presented, in particular by local stakeholders.

The second point allowed the participants to provide additional information that they felt was important and that had not been included in the presentation. Two points were of notable interest. First, district authorities, farmers and traders explained that a growing number of farmers were engaging in collecting agricultural products for a very short time at peak selling periods (such as the period following paddy harvesting). This influenced the performance of the commodity chains by reducing the trade margins, through stronger competition, but also by decreasing the homogeneity and overall quality of the products sold to local wholesalers. Second, rice wholesalers explained that farmers' choice of cultivation techniques had a strong influence on grain quality, and they confirmed that there was no efficient information and price link to induce farmers to pay more attention to this issue.

The third point aimed at discussing several elements unveiled by our analysis but which, because of their potential importance, needed confirmation by the concerned actors:

- ✓ Farmers seemed to face problems in getting pesticides, veterinary products and seeds of good quality.
- ✓ Pig raising profitability was mainly dependent on low feed costs but, at the same time, few farmers shifted from feeding with rice (expensive) to feeding with cheaper products such as corn for instance.
- ✓ The relation between rice or pig quality and their respective prices was not clear.
- ✓ The relation between the farm-gate price of pigs and the retailing price of meat was not clear.

The discussion was organized along these four topics with the participants respectively concerned.

Discussions on the first topic confirmed initial conclusions and described a situation where farmers, suspicious about bad quality inputs, became reluctant to spend money for modern inputs, preferring cheap ones (of bad quality, increasing again their suspicion) or reversing to input self-production in the case of seeds.

Discussion on the second point revealed two issues. On one hand, many small-scale pig producers mostly appeared to rely on feeding techniques unchanged for years. They were interested to discover that more efficient ways of feeding could be sought by replacing rice by cheaper products. On the other hand, the daily quantities of feeds used were small and this raised the question of the transaction costs of selling self-produced rice, available at home, to buy alternative feeds.

Discussion on the third point confirmed that no transparent or stable arrangement regulated how the price of rice or pigs sold by farmers related to quality.

Discussion on the last point revealed that retailers had a peculiar way of adjusting prices. Rapid interviews had shown that pork retail prices were more stable than farm-gate pig prices. During the meeting, retailers explained that they adjusted to a pig price increase by mixing more lower quality cuts with the usual meat cuts and did the opposite during price decrease periods. It appeared, though, that this system, which apparently was reducing price risks for consumers, lacked transparency and opened the way to unfair behaviour, which in turn could negatively influence the performance of the commodity chain.

The last part of the meeting aimed at discussing the challenge of development for the pig and rice commodity chains and at having a first overview of the possible ways to tackle these challenges. This part was organized like an expert meeting, with all stakeholders participating.

Comparing the results obtained by this process with local and national actors, two different views appear on what should be done to foster development. For farmers and traders, it is necessary to find markets for the existing local products. For national officials, it is necessary to find what and where are the market opportunities and to push farmers to fill these 'market niches'. At that time, the two views focused mainly on export opportunities but in different ways.

Besides the validation aspect, this meeting permitted the addition of new insights to the initial diagnosis, and advocated seeking more information on how rules and inter-relations worked in the two commodity chains, especially concerning quality management. It also showed that all stakeholders were asking for more information on the situation of markets outside local boundaries: inter-regional and export markets. Finally, it added skills and facts to support the on-going shift in Vietnamese agricultural policy orientation from production intensification to marketing and quality development.

Enhancing interactive participation of stakeholders in policy formulation

Expert meetings and validation meetings are two opportunities for stronger stakeholder involvement. Because these meetings are basically aimed at generating information and sharing it, the stakeholders usually easily accept them. Their technical nature does not threaten the

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autonomy of the participants. On the contrary, they are conceived to provide a benefit through the accessibility of information. At the same time they serve another purpose, which is to make it progressively possible for different stakeholders to know better the others and to take their existence and perception into consideration. They are rather loose and flexible mechanisms, with relatively low cost.

However, to complement these meetings with the objective of strengthening involvement at decision-making levels other mechanisms are required. An appropriate approach for enhancing stakeholder involvement in policy-making is to create “policy arenas within which (...) actors can address how to making are included in the methodology of the Ecopol project. They derive from the national workshops developed in the CADIAC approach (Bourgeois, and Herrera, 2000).

Arena for stakeholder participation in policy decisions

These policy arenas follow several expert and validation meetings designed to help clarify the stakes and make an accepted representation of the system. From this point, stakeholders can be invited to conceive together possible paths of action or to discuss proposals for action elaborated through various methods (Chapter V: Exploring scenarios with simulations, p.106). Thus, depending on the situation and the means available, one (or several) policy arena workshop(s) can be organized, aimed at defining what a policy should be and discussing different policy options. The main objective of such arenas is to define a set of priority actions to be implemented.

Principles for policy arena workshop organization

In a policy arena workshop, all stakeholders should be present, and in particular their true representatives entrusted to negotiate and to make decisions. This arena must be convened jointly by the stakeholders. Some rules of organization, based on experience (Bourgeois and Herrera, 2000), have been established as follows.

On participation

The participants must receive the information subject to discussion sufficiently in advance so that it can be discussed and understood by the different stakeholders. The number of participants may be quite high. Meetings with about 80 participants were held with success.

On interaction

In order to ensure interaction, after an introduction of the objective and main issues to be dealt with, participants are called to work alternatively in groups and in plenary sessions. Similar to validation meetings, work groups are made up of six to ten people, with one spokesperson. In each of the groups, different stakeholders must be represented. The outcomes of the work of the groups are discussed in a full session in order to reach a consensus on the actions to be taken.

On guidance

For the policy arena, guidance is one of the most critical issues. The role of the moderators is of paramount importance. These persons must be selected so that all the attending stakeholders recognise their capacity to conduct the meeting and facilitate the discussions. The moderators or the organizations they belong to must not be important stakeholders in this process.

Stakeholders' involvement post policy arena

Experience shows that the establishment of an inter-institutional co-ordination mechanism is almost always included in the policy agenda of changes requested by the participants in order to monitor policy orientation and to carry out the necessary adjustments accordingly. This means that stakeholders become fully involved and active in the policy formulation process, and succeed in deciding how their preferences should be reconciled.

Principles for efficient guidance

As stated before, the implementation of a policy arena workshop comes after several expert meetings and validation meetings and after a good technico-economic and socio-institutional characterization of the system.

This means that knowledge on the situation and on how the stakeholders interact has been acquired and validated. It would therefore, be a waste of time for a policy arena workshop to be the venue for a new description of a situation already described. This, however, is very likely to occur without a clear and accepted mode of guidance. Therefore, it is important to prepare carefully how the persons in charge of the workshop will operate.

The preparation of a policy arena workshop has to be based on extensive use of the results of previous surveys, analyzes, and expert and validation meetings. Information on what are the main issues that need to be tackled, on which mode of action is considered by stakeholders without being implemented yet, on which stakeholders appear to have an important role in making changes possible and on which a stakeholder would be a potential leader to carry out these changes is the core of a good policy arena workshop.

On choosing and defining the topics for discussion: the importance of a common language, the importance of convergent views

The objective of a policy arena workshop is always clearly defined: either participants are invited to conceive proposals for action or they are invited to discuss the advantages and drawbacks of existing options for change. The topic of discussion may, thus, seem easy to define.

However, experience shows that, when a collective definition of policy measures or change process is at stake (i.e. when dealing with multiple stakeholders having different perceptions of the same reality), building consensus (Brinkerhoff, 1996b) and crafting a mediation language (Ollagnon, 1998) is crucial. Some analysts even consider that successful co-ordination relates to a specific type of equilibrium: common beliefs based equilibrium (Defalvard, 1993).

If all stakeholders agree that the issues introduced for discussion are important and call for changes, it is possible to use this consensus in order to define detailed action proposals. On the other hand, proposing discussion issues where divergent views exist among stakeholders makes it impossible to conduct constructive discussions. Participants will spend most of the workshop time presenting their different points of view and arguing their respective validity but will hardly be able to converge in saying there is a need for change, leaving the conception of practical proposals a very far-flung notion.

Moreover, the type of rules and actions defined in the workshop is determinant for their chances of success. They must be perceived as beneficial by all and should not threaten the different actors' autonomy (Brinkerhoff, 1996a; Ostrom *et al.*, 1993), otherwise the implementation of these proposals is likely to induce conflicts and opposition. To achieve this, building debate on consensual issues is also crucial.

These are points where the institutional analysis (Box 9, p. 38) proves very helpful. Through the analysis of actors' perceptions, this method can reveal areas where different views converge. It determines the issues (the qualities) on which most stakeholders agree to say there

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is a need for improvement and the issues for which differing or conflicting views are present among stakeholders (Box 21). It also provides words expressing these ideas, as tools to shape common decision-making. With this information, the persons in charge of a policy arena workshop can introduce agreed-upon issues to stakeholders in order to start discussions from a consensus and to avoid focussing discussions on divergences.

Box 21.

Organizing policy arena workshops on the performance of two commodity chains in Viet Nam: The definition of discussion topics enabling a constructive debate

In Viet Nam, two series of workshops were organized so that the different stakeholders concerned with the pig or the rice commodity chain could meet and devise together proposals aimed at enhancing the performance of the commodity chains and providing means for better policy-making on these topics. Separate workshops were organized for rice and for pig, and all were held at the provincial headquarters.

Each workshop included representatives of:

- the government (Ministry of Agriculture, Ministry of Planning and Investment),
- the province authorities (people's committee, agricultural services),
- the district authorities and services (people's committee, agricultural office, veterinary services, agricultural extension services, plant protection services, market monitoring services),
- the bank for agricultural development,
- the co-operatives,
- the different types of farmers,
- the agricultural product collectors,
- the rural wholesalers,
- the urban wholesalers,
- the urban retailers,
- the urban consumers,
- the agricultural input sellers,
- the researchers,
- the state-owned processing or trading companies.

During the first discussions, the guidance team tried to introduce discussions on all the issues (all the qualities) defined after the institutional analysis (Box 16). Concerning the pig commodity chain, this meant, in particular, trying to have participants discuss the need of more "food safety" for pig meat and the improvement of relations between farmers and traders, two subjects for which, clearly, there were different views (p. 59).

For both subjects, discussions were long and without clear results. Concerning food safety for pig meat, urban consumers, retailers and wholesalers claimed it was a very important problem that needed to be tackled, while farmers, representatives of provincial or district authorities argued that it was not as important as perceived, that it did not concern the participants and was to be dealt with by the Ministry of Health. Similarly, concerning the relations between farmers and traders, representatives of the state authorities insisted on the need for farmers to organize themselves in new forms of co-operatives or in production groups to have a stronger competitive position or to be able to get involved directly in trading, while farmers and traders either did not react or considered the idea unfeasible or too far-flung.

At the same time, discussions on issues for which importance was commonly accepted were easy to guide and allowed constructive participation of all stakeholders. They led to detailed proposals of action for the future. It was thus decided to focus discussions and problem solving around the commonly accepted needs for improvement as expressed during the institutional surveys. These are:

For the pig commodity chain:

1. The need for farmers to produce pigs in a market-oriented way (especially lean pigs).
2. The need to develop pig sales for urban, inter-provincial markets and export.
3. The need to reduce pig production costs.

For the rice commodity chain:

1. The need for farmers to produce and sell rice in a more market-oriented way (concerning rice variety, grain inner quality and sale of more important quantities).
2. The need to develop rice sales for urban, inter-provincial markets and export.

The issues where no consensus among stakeholders has been reached yet are still important topics that might appear crucial to solve in the future. However, stakeholders are not currently ready to discuss them. Still, it can appear, as will be shown in Box 23, that discussing solutions for the commonly accepted issues can help tackling part of those more difficult subjects.

On choosing and defining the topics for discussion: the importance of focusing the debate

The organization of a policy arena workshop is a rare opportunity to have all the stakeholders in the same room ready to discuss issues together. It is also a significant investment especially in terms of human resources. For these reasons, the role of the guidance team is very important in leading the participants to discuss and draw out proposals in an efficient way.

To achieve this, the guidance team needs to focus the debate to make sure that discussions do not linger on describing a situation that has already been described or on defining problems that have already been defined. This means that, prior to the workshop, existing results have to be reviewed by the team in order to assess the domains where important problems remain and where new actions, policies, reforms are needed. During the workshop, the discussions should be directed specifically on these domains.

Moreover, since a policy arena workshop may be the only opportunity for most of the different types of stakeholders to discuss issues together, it has to be used to help them conceive ways to modify situations where co-ordination of action from multiple actors is necessary (Box 22). To do so, the guidance team can focus discussion on topics that require the participation of all stakeholders to be solved i.e. on topics where stakeholders' interaction is either the main source of a problem or a key solution.

Box 22.

**Organizing policy arena workshops on the performance of two commodity chains in Viet Nam.
Focusing the debate on domains where stakeholders' interaction is critical**

For the two series of workshops organized in the Red River Delta, Viet Nam, on the performance of the pig and the rice commodity chain, the guidance team was able to exploit knowledge coming from several expert meetings, from technico-economic surveys of farmers, processors and traders, as well as from institutional surveys and validation meetings.

These different sources of information enabled the team to select the most important problems that needed to be solved in order to improve the performance of the commodity chains and to focus on the domains where stakeholders' interaction was at stake.

As indicated in Box 21, for the pig commodity chain, three general topics had been chosen for discussion: the need for farmers to produce pigs in a market-oriented way, the need to develop pig sales in urban, inter-provincial markets and exports and the need to reduce pig production costs.

To organize the debate, stakeholders attending the workshops were split in two groups, one group discussing problems related with the production side (the third topic as well as part of the first one) and one group discussing problems related with the marketing side (the second topic and part of the first topic).

In these groups, the guidance team helped organize the debate around the domains presented in Table 32

Continued

Box 22. (continued)

**Organizing policy arena workshops on the performance of two commodity chains in Viet Nam.
Focusing the debate on domains where stakeholders' interaction is critical**

Table 32. Domains proposed for discussion during policy arena workshops on improving the performance of the pig commodity chain in the Red River Delta, Viet Nam

Issues where stakeholders share similar perceptions	Domains where interaction is at stake	Actors concerned by the interaction
The need to reduce pig production costs	Reducing feeds costs	Farmers producing feeds sources Farmers raising pigs Feed traders The government (through import taxes on feeds sources)
	Decreasing pig disease occurrence	Farmers with healthy pigs Farmers with sick pigs Veterinary services Traders (buying or selling healthy or sick animals)
	Improving raising techniques	Farmers (exchange of knowledge) Agricultural extension services Traders (source of information)
The need for farmers to produce pigs in a market-oriented way	Constructing a transparent system for quality payment at farm level	Farmers Collectors Wholesalers Food and input control services (food safety)
	Access to market information for better adaptation of production systems (quality production)	Pig traders Agricultural services Farmers
	Ensuring stable and significant quantity produced in one location	Farmers Traders
The need to develop pig sales in urban, inter-provincial markets and exports	Enhancing the role of the private sector in developing pig processing and exportation	Private traders State offices The banking system
	Relationship between traders, especially concerning late payments	Traders Legal institutions

In a similar way, for the rice commodity chain, as indicated in Box 21, two general topics had been chosen for discussion: the need for farmers to produce and sell rice in a more market-oriented way and the need to develop rice sales in urban, inter-provincial markets and exports.

To organize the debate, as for the pig commodity chain, stakeholders attending policy arena workshops on the rice commodity chain were split in two groups, one group discussing problems related with the production side (the first topic) and one group discussing problems related with the marketing side (the second topic).

In each group, the guidance team helped organize the debate around the domains presented in Table 33.

Continued

Box 22. (continued)

**Organizing policy arena workshops on the performance of two commodity chains in Viet Nam.
Focusing the debate on domains where stakeholders' interaction is critical**

Table 33. Domains proposed for discussion during policy arena workshops on improving the performance of the rice commodity chain in the Red River Delta, Viet Nam

Issues where stakeholders share similar perceptions	Domains where interaction is at stake	Actors concerned by the interaction
<p>The need for farmers to produce and sell rice in a more market-oriented way</p>	<p>Organizing production (and farmers' sale) on large areas</p>	<p>Farmers selling rice Farmers not selling rice Local organizations such as co-operatives</p>
	<p>Disseminating market information to help the choice of rice variety and cropping or post-harvest techniques</p>	<p>Agricultural services Private traders Farmers</p>
	<p>Collecting homogeneous products from various small-size farmers</p>	<p>Farmers selling rice Farmers not selling rice Traders Co-operatives</p>
<p>The need to develop rice sales in urban, inter-provincial markets and exports</p>	<p>Relationship between traders, especially concerning late payments</p>	<p>Traders Legal institutions</p>
	<p>Access to information on the market (demand and prices) and on the orientation of the different production zones</p>	<p>Traders Market monitoring authorities Co-operatives Farmers in the production zones</p>
	<p>Ensuring sufficient quantity traded and their quality</p>	<p>Traders Farmers Cooperatives (similar to problems of collecting homogenous product)</p>

On these different points, participants were invited to propose and discuss solutions, to consider the means that would be necessary to implement these solutions and to propose a co-ordination process to ensure efficient implementation.

For each discussion group, a person from the guidance team was in charge of organizing the debate and illustrating its results using big posters and colour cards to write down the conclusions as soon as they were formulated.

For each group, a spokesperson had also been chosen to assist the guidance team and to prepare the final restitution to all participants at the end of the workshop. This person was chosen among the participants considered legitimate to lead a change process as shown by the former institutional analysis (Who can initiate ..., p. 64). The advantage of having such spokespersons, during the final session of the workshop, where all groups gather together again to discuss, modify and define the final conclusions, was to make sure that the conclusions were presented and endorsed by a potential leader.

The final conclusions of these workshops are presented in Box 23.

Box 23.

Conclusions of policy arena workshops on the performance of the rice and pig commodity chains in the Red River Delta, Viet Nam

Stakeholders' proposals for the rice commodity chain

Organizing production and trade zones at farmers' level

During the workshops, all stakeholders agreed that improving the performance of the rice commodity chain required that farmers produce in a more market-oriented way. However, only some farmers currently produce rice with the aim of trading it (self-consumption and pig feeding being two important uses of rice). Farmer sales are usually small and, thus, the quality of the traded rice shows a high heterogeneity, which, once collected by traders, makes it difficult to ensure consumers and customers with stable quantities and qualities for a given type of rice.

Considering this situation, stakeholders propose that rice production be organized by zones. This would make the sales and collection of big homogeneous quantities easier, and would also ease technical extension work and problems related with irrigation inter-linkage among farmers' plots.

To achieve the building of such rice production zones, actors consider two important steps.

The first step concerns the current dispersion of plots allocated to each farmer. In most communes, farmers with less than one quarter of an hectare can have up to 10-15 different plots. Actors, thus, propose to promote land exchange among farmers so that each farmer would only have a few plots concentrated in the same area².

Achieving this may not be as simple as it appears. Although, in some places, farmers have started to exchange plots by themselves, this is still very rare and in many communes of the Red River Delta the high heterogeneity of plots makes it difficult to implement plot concentration. Besides, although the land law of 1993 entitles farmers to exchange, sell and buy land-use rights, many localities consider that the application of this law at local level has not been cleared yet.

Learning from examples where the land exchange process could start, actors consider that it belongs to the provincial authorities to give authorization to district authorities to authorise commune officials to start organizing land exchange among farmers aiming at reducing the number of plots.

Once this has been achieved, the second step, the organization of similar modes of rice production among farmers of the same zone, can be started. For this second step, all actors consider that it is mainly the responsibility of commune authorities to organize discussion among farmers so that a production mode can be agreed upon and implemented by all.

This step requires, of course, that all farmers agree on the process, since, the final decision on production remains theirs. But stakeholders agree that commune authorities have an important role to play in ensuring that farmers are interested in such a process: they can select and provide seeds of good quality, adapted to the zone conditions and provide information on production and post-harvest techniques.

Selecting good quality adapted varieties requires first that farmers agree on the main objective of their rice production. If they mainly want to feed their family or produce rice to feed pigs, the choice of variety won't be the same as a situation where farmers mainly want to produce rice for trading. Once this objective has been defined, the choice of seeds can be done. This choice requires knowledge about the yield and production requirements in the zone, but also, when selling is an objective, knowledge about the quality achieved by producing a rice variety in the zone, as assessed by consumers.

For the first type of information, research and extension organizations may provide support. For the second type of information, few actors have extensive knowledge of which rice variety gives a good marketable quality in which zone and with which post-harvest techniques at farm level. Fortunately, rice wholesalers, mainly private, often possess such knowledge. Therefore, it is advised that communes, where selling rice is an important objective, start to link with private wholesalers as advisers in their production organization process. This could be done through a contract dealing both with traders' advice and rice selling.

Continued

² In Viet Nam, with the land law of 1993, long-term land use rights were distributed to individual farmers. In the Red River Delta, co-operatives in charge of the distribution evaluated the quality of each rice field (based on expected productivity) and distributed farmers an equitable area of land composed of an equitable share of each land type. As a result, each farmer has around one quarter of an ha scattered in up to 20 plots representing different qualities of land. Beside the resulting equitability, some may also argue that this situation allows a better risk management. However, today, farmers object to the difficulties of managing rice fields that are both strongly dispersed and very small.

Box 23. (continued)

Conclusions of policy arena workshops on the performance of the rice and pig commodity chains in the Red River Delta, Viet Nam

Improving the trading environment and the trading rules

Two proposals by stakeholders concern the improvement of the trading environment in general.

The first proposal is to develop a system that would help solve the non-respect of trading contracts, especially concerning late payment among private traders. It seems that a legal system already exists for solving market problems linked with trade contracts. However, traders and other stakeholders do not use it for two main reasons: it does not provide a quick resolution of problems (such as late or non payment) and it requires contract documents that are often non-existent.

It was suggested that a common discussion be organized between private traders and officials in charge of the local application of trade contract laws to see how the two sides could design a system that is both time efficient and in respect of the law.

A second proposal concerns rice circulation and transportation. Although this has often been stressed in documents concerning trade in Viet Nam (for example, IFPRI, 1996), it seems that traders still face problems with road controls: they seem too numerous, often subject to "un-planned" payment of special fees and, thus, hamper transportation of agricultural goods and increase their cost.

This problem may not be as one sided as it appears, as transporters may also have their own blame in the process (the search for lower margins sometimes leads to overloaded trucks or ill maintained ones). However, efforts from the government and provincial authorities to ensure that road controls be efficiently controlled is a regular demand from traders of agricultural products.

Stakeholders' proposals for the pig commodity chain

Organizing production and selling at the farmers' level

The discussions involving consumers, farmers and pig traders or slaughterers brought to light the very peculiar situation of a commodity chain full of potential but still unable to take advantage of it. Pig collectors, wholesalers and slaughterers explained that they had difficulty providing consumers with enough lean meat, because it was hard for them to find sufficient sources of lean pigs, while, at the same time and in the same region, farmers did not dare engage themselves in producing lean pigs for fear of being unable to sell them easily and/or to find a better price for this higher quality.

The discussions, involving both sides, led to the conclusion that it is necessary to build contracts between the two. These contracts would ensure traders that, in a given place, pigs would be produced in a sufficient amount and with production techniques ensuring the lean pig quality. They would ensure farmers that, with such production quality, collectors would buy the whole quantities with higher prices than the usual pig quality price.

To make it possible for such contracts to be drawn and to be fulfilled, actors consider that two elements are required: the organization of farmers' production in groups and the monitoring of the contract by a third party.

Concerning farmers' organizations, it was agreed that farmers should establish pig production groups or pig production zones based on which contracts could be made with pig traders. The organization of such groups can only come from the will of farmers themselves and should respect the individuality and choices of each producer.

The role of a third party - that could be played by commune authorities or the district agricultural extension offices - is important to support the building of these groups, to assist them in developing and implementing new production modes and to stimulate trust among traders.

With such involvement of the different types of stakeholders, contracts concerning the quantity and mode of production can be achieved and respected. In fact, the collectors and the Hanoi slaughterer-wholesalers present during the workshops stated that they would at once agree on a buying contract and send a truck to fetch the pigs if such a system existed now.

Continued

Box 23. (continued)

Conclusions of policy arena workshops on the performance of the rice and pig commodity chains in the Red River Delta, Viet Nam

Reducing pig production costs

The very high level of feed costs is one major constraint faced by pig production in the Red River Delta (Table 10, p. 41 and Jésus, 2000). During the workshop, actors proposed two ways to reduce this type of production cost.

The first way is for farmers to process feeds themselves. This can be done individually or among pig production groups by simply buying and mixing the different products necessary to make a balance diet for pigs. Doing so can provide feed which is adapted to pigs' needs and at a lower cost compared to industrial feeds sold in the Red River Delta at prices too high to be economically efficient (example: one kg of "industrial" compound feeds is sold around 7,000 vnd/kg and one kg of live pig is sold around 9,000 vnd/kg while one kg of live pig would require 3-4 kg of feeds).

However, this way of mixing sources of feeds may not be new to all farmers. To make it more efficient requires counselling on which products to choose and how to mix them. This leads to a second proposal by stakeholders, which is to develop local feed production at the commune level. For this, actors recommended that localities be supported by the State to develop local feed production units.

Promoting the emergence of specialized counselling organizations

In both provinces, actors stressed the fact that although a State extension network already existed, there was a strong need for a counselling system specialised on one product, pig, which would be closer to farmers and focused on both production and marketing problems.

The role of these counselling organizations would be to advise farmers concerning veterinary practices, pig feeding and raising, and piglet choice and also to inform them on market trends and market demands. Their role could then extend to supporting the emergence and functioning of farmers' pig production groups, supporting the definition and implementation of contracts between farmers and traders, etc.

This counselling system would associate both technicians and private traders as counsellors.

Improving the commodity chain environment and the trading rules

The stakeholders made several proposals during the workshop concerning an improvement of the global environment of the pig commodity chain.

The possibility for private traders to engage in pig meat processing and in pig exportation

As the institutional survey showed, several private pig traders are willing to invest in processing or exporting pig products, but face difficulties in implementing such a project.

A first difficulty mentioned by traders is the access to loans for such projects. During the workshop, provincial agricultural offices informed the attending traders that specific credit schemes had been opened to finance such projects and would enable them to find loans at special interest rates. In fact, the workshop showed that the existence of this credit scheme is not sufficiently known to private traders and that information still needs to be more widely broadcast to ensure full and efficient use of it (through information meetings targeting private traders, radio and TV broadcasts, etc.).

Another difficulty mentioned concerns the fulfilment of all administrative procedures (including customs procedures when exports are concerned), which seems complicated for traders. Again, it was proposed that provincial authorities set up a service providing this kind of information to private traders coming with processing or exporting projects in order to make it possible for such projects to be developed and implemented.

A last difficulty specific to projects dealing with exportation concerns the possibility of contacts with foreign buyers (or investors). In some countries, specific services have been set up for foreign traders and national traders to be able to meet and set up contracts. Such services do not exist yet in Viet Nam. Currently, provincial authorities meeting foreign traders interested in Vietnamese products usually direct them to state-owned exporting companies. In fact, provincial authorities do not know the local private traders that would have been interested and, at the same time, private traders do not know whom to contact to get information on foreign buyers.

Considering these three points, stakeholders recommend the setting up of a specific "all-in-one" service, accessible at the provincial level and in cities like Hanoi, to inform traders (private and state-owned) on credit facilities and administrative procedures, and to make the link between private national traders, entrepreneurs and foreign buyers and investors.

Continued

Box 23. (continued)

Conclusions of policy arena workshops on the performance of the rice and pig commodity chains in the Red River Delta, Viet Nam

Concerning the implementation of the proposed actions

As stakeholders stated during the workshops, making it possible for the different proposed solutions to be implemented efficiently requires:

- Co-ordination of multiple stakeholders and multiple levels of authority, which should be led by representatives from the State (at national, provincial, district or commune levels, depending on the topic).
- Possibilities for all stakeholders to participate in such a process.
- Preservation of the interests of all parties in the different collective or common schemes to be devised and implemented.

The active participation of stakeholders during the workshops showed that many are willing and ready to become involved in such a process of change. An option could then be to leave it to local initiatives to develop on their own processes. However, such an option would limit the development of solutions and make it impossible for the government to monitor and help the development of strategies for pig or rice commodity chain improvement.

A better solution would be to establish groups at ministry level as well as at provincial level, including officials, producers' representatives and traders' representatives with direct access to decision makers in order to promote a precise conception and implementation of the proposed solutions and to facilitate their execution.

The decision to set up this kind of group can only come from the government or provincial decision makers, but once it has been taken, scientists or analysts trained in the use of participatory decision-making methods can help these groups work efficiently.

Beyond the policy arena workshop: rationales for a shift in policy orientations

Two general conclusions for policy orientation can be drawn from the results of the discussions that took place during the workshops presented above: one relates to the role of the State and the second concerns the means for facilitating the dialogue among stakeholders.

First, it appears that when coordination of multiple stakeholders or mediation are at stake, an important problem faced by policy makers, analysts and scientists in Viet Nam is the absence of real representatives of the different types of stakeholders. At the production level, finding representatives of pig producers or rice sellers able to speak in the name of their peers and defend their interests is close to impossible. The same occurs when dealing with agricultural product collectors, wholesalers or retailers.

Since more and more problems of policy definition will require stakeholder consultation and co-ordination, making it possible for such representatives to emerge would be a strong advantage for Viet Nam.

Second, the emerging support of State intervention is quite confusing. During stakeholders' interviews and during the workshops, in discussions on solutions to be proposed for improving the performance of the rice or pig commodity chains, many actors considered that the State in general (i.e. the government, the province, district and commune people's committees) had to take the lead in making changes happen. Some stakeholders even proposed more direct intervention of the State: more investment in infrastructure, in research in agricultural extension, more price control, more direct buying or selling, etc.

These propositions do not fit with the current evolution of State intervention and State policy in Viet Nam. It is as if many stakeholders would like to see the State go back to its pre-liberalization intervention role, while at the same time they want to keep their freedom of decision. It is also quite clear that the current trend of world trade agreements and the international requirement of financial balance make such policies almost impossible to implement.

In a striking way, most stakeholders agree that most problems lie in the way actors interact and, to be solved, would require different behaviour and different rules for interaction.

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However, once such conclusions have been reached, most feel ill equipped to modify interaction rules or create new ones. Unable to cope individually with forms of collective decisions involving multiple actors, they refer to the State as the only collective entity known and legitimate to tackle such problems.

In this case, however, the role of the government and of local authorities cannot be the traditional role of State intervention mentioned above. It has to focus, instead, on devising means enabling actors to modify interaction rules. This requires mediation processes and entities to control the respect of agreed upon rules. In Viet Nam, no other actor but the State is currently considered legitimate to play such a role but at the same time, the State needs to make a shift in its policy orientation to acquire skills and devote means to such activities.

A shift of this kind in policy orientation is crucial to ensure both sustainable development and means for State guidance in the future. Moreover, to make it efficient, the first task would be to inform all state authorities and agencies and all stakeholders of what the State cannot do anymore and on what the State can do from then on.

The tools proposed in this chapter aim at complementing the stake identification methods of the previous chapter in order to enable an active and efficient participation of stakeholders in the policy formulation process. They can (1) facilitate the validation and diffusion of information, (2) enable early contacts and discussions among stakeholders, (3) help stakeholders build commonly agreed plans for action.

Once proposals of change emerge from this phase of the RAINAPOL approach, it is necessary to proceed to an estimation of their potential impacts and concrete feasibility. For this purpose prospective tools can be used to check that no important future evolution has been overlooked and simulation models can test the different strategies and scenarios of evolution to evaluate the related gains and losses for different stakeholders and for the system as a whole. The next phase of the approach proposes to use these tools to help stakeholders define a feasible strategy, accepted by all, to achieve a better situation. It supports the development of the second- or third-best course of change on which stakeholders can achieve a consensus over the life of a policy reform (Brinkerhoff, 1996b). How to achieve this will be presented in Chapter V.

Chapter V

Building Common Plans and Meta-Decisions

Chapter II, Chapter III and Chapter IV respectively dealt with tools and approaches for identifying policy objectives and stakeholders, for characterizing the stakes for the different actors, and for promoting stakeholder involvement through interactive participation in generation and sharing of information and in decision-making. At this point, stakeholders share a common and more accurate view of their system and of the way they deal with it. They have achieved to draw up a set of proposals for action, agreed upon by all. These are important elements that relate principally to diagnosis and perceptions of a problem with a focus on the current situation.

However, a successful collaborative and coordinated public decision (the meta-decision described in Chapter I) cannot just be taken on the basis of the current picture of the system, however good the quality of this picture might be. The elaboration of such type of public decision requires some further insights regarding how the system may change in the future and regarding the potential impact of projected actions or decisions. Crucial reflections need to be made to assess whether the actions considered by stakeholders will still be relevant and effective in the years to come.

There is a need to explore what the possible future might be (i.e. building scenarios) and to qualify what it would imply for each type of stakeholder as well as for the system itself (i.e. simulating changes according to the scenarios). According to the level and objective of a planned decision, different tools may be used: prospective analysis, economic simulation of household behaviour (as will be presented with the MATA model), the scenario-based exploration of the potential of a commodity chain (as developed in the CADIAC method), and multi-agent modelling for institutional changes.

In this chapter, we will first show how exploration of possible futures can lead to better public decision-making through scenario building. For this, a participative prospective analysis method will be presented and exemplified with a case from northern Viet Nam. We will then go through the potential use of some simulation tools. These tools were not all directly used within the Ecpol project and their presentation essentially deals with their potential, illustrated by simple examples of the type of results they can achieve.

Building scenarios to explore the futures

Looking at the future should not be limited to making predictions; it should include the identification of a range of possible futures (Godet, 1996). This is the objective of the prospective studies approach (prospective analysis) developed primarily for the strategic management of organizations. Three elements characterize prospective studies in general: anticipation, appropriation and action. Anticipation relates to analysis and investigation aimed at generating information about the future. Appropriation relates to the necessary participation of the actors in the process of exploring the future. Action relates to selecting a path leading to the desired situation and acting so that the probability for this path to become true significantly increases.

These three characteristics fit well the objectives of reconciling actors' preferences in policy definition. In fact, by using prospective analysis tools within the RAINAPOL approach,

the aim is to help stakeholders reflect on what they might face in the future in order, for them, to be able to design strategies of change that have better chances of success.

The advantages of using scenarios

A scenario is a description of a future situation and the events that permits going from the current situation to the future situation (Godet, 1996). There are broadly two types of scenario: the exploratory type and the anticipatory/normative type. Exploratory scenarios are based on the extrapolation of possible futures using information from past and current tendencies. They are used when trying to understand if future risks and opportunities call for change in current strategies. Anticipatory/normative scenarios are based on an alternative image of the situation in the future and the events that could lead to it from the present situation. They are used when an objective for the future is set and reflection is needed to design a strategy that will tackle the various possible future situations in order to ensure the objective is achieved. In both cases, it is possible to define contrasted (extreme) scenarios.

The hypotheses behind the building of scenarios must satisfy specific criteria in order to keep the exploratory work realistic. These criteria are relevance, consistency, likeliness, and transparency. Hypotheses must be relevant in the sense that they correspond to real changes in the system. Consistency means that all hypotheses must be coherent and compatible among one another. This relates also to the necessity of likeliness: the probability of occurrence of the events must not be infinitesimal. Finally, the need for transparency means that hypotheses must be clarified, made accessible to all, and their logic easily understandable.

The use of scenarios is common to most tools dealing with reflection on the future. However, the way they are built can differ strongly.

For predictive approaches, only one scenario is built, usually based on the personal insight of a few experts or analysts. Since all possibilities of evolution that do not fit in the scenario are left apart, the risk of strategic failure is high when alternative futures with dire implications are not considered.

Scenarios used for simulations through models have more flexibility. They are built on hypotheses about the evolution of key variables both within and outside the system and about the related behaviour of actors. Unfortunately, the hypotheses concerning the structure of the model are difficult to change, and the modification of key quantitative variables only allows exploring a limited range of possible evolutions. Besides, the choices related to the structure of the model and to the selection of variables are often left to model builders. This means that model builders indirectly have a say on the actions that can be considered for change. And, therefore, it means that model builders can have a strong, disturbing, often non-explicit influence on the decisions to be made (D'aquino, 2002).

The construction of scenarios through prospective analysis, though more qualitative can overcome the difficulties faced by prediction and simulation tools. Prospective analysis allows both to consider an unrestricted range of possible futures and to leave to stakeholders the choice of background hypotheses that are so decisive for the subsequent design of strategies.

Reflecting on what the future may be, on what risks and opportunities may lie in tomorrow's situations can be of utmost importance when designing decisions that involve an important number of stakeholders and their co-ordination. As thus, it fits in the RAINAPOL approach. Among the different methods enabling to reflect on future stakes, the preference for prospective analysis tools is legitimated by a concern for transparent public policy decision. This is crucial for the involvement of stakeholders and their subsequent commitment to the resulting strategies. As will be shown in the following parts, prospective reflection can be used with stakeholders to foster consensus emergence and collaborative actions.

Prospective analysis to reconcile actors' preferences in policy definition

Anticipation of future risks and opportunities is an obvious advantage for any decision maker preparing a development strategy. Experiences also show that it is a powerful tool to promote conciliation and common decision-making among stakeholders.

In conflicting situations, trying to solve disagreements or to define a common objective is difficult. Actors often argue on what should be done today and how, each with a different perception of the problems at hand and their possible solutions. On the reverse, reflection on what the future may be can facilitate agreement of what should be done at present (Weber, 1996). Stakeholders can more easily agree on a vision of possible long-term evolutions and their consequences. From there, it is easier to reach an agreement on common objectives and common actions to avoid future menaces and support favourable outcomes through current actions.

Prospective analysis, thus, appears useful to construct a common vision among stakeholders in order to design and implement successful public decisions. It provides useful insights on the feasibility of strategies to be implemented and it complements very well the use of validation meetings and of the PACT method to identify shared objectives and build collaborative actions.

Organizing a prospective workshop

Prospective workshops have been developed by M. Godet (Godet, 1996). The method proposed for the present approach follows 5 main steps:

1. Definition of the different variables influencing future evolutions.
2. Assessment of the influence of variables on each other.
3. Determination of the most influential variables at present and in the future.
4. Design of possible evolutions (contrasted scenarios) resulting from changes in the most influential variables.
5. Description of the consequences of each scenario and design of an adapted strategy.

The practical organization principles of a prospective workshop are very similar to those defined for policy arena workshops (Chapter IV: Arena for stakeholder participation ..., p. 82). However, several important differences need to be highlighted.

Concerning the selection of participants

Participants should still represent the various views and stakeholders within the system. The existence of partial perceptions and the objective of building common decisions render the selection of outside experts ineffective (as good as these experts may be). However, participants in a prospective workshop should be selected because of their broad and far-sighted perception of the system whose future will be discussed.

As for other expert meetings, for practical reasons, the total number of participants in a prospective workshop should not exceed 10-15.

Concerning the practical organization of a prospective workshop

While the previous types of workshop and expert meetings could be organized in one day, a prospective workshop takes at least 3 to 4 full days. Consequently, much attention should be paid to the planning of such workshops. Organizers should make certain that all participants would be able to attend the whole 3-4 days to ensure the quality of the results. If necessary, the workshop can be split into two to four different meetings to meet the availability of the different participants.

The five steps of a prospective workshop

Defining the variables influencing future evolutions

After presenting the objective of the workshop, its participants and its program, the first step of the workshop is to define, with the participants, all the variables that have an influence on what the system can be in the future.

For this, the guidance team asks participants to describe what they think the system will look like in a distant future (10-20 years from now). These individual reflections do not need to be collected or shared, their objective is to help participants think about the future in order to facilitate their identification of the variables that determine what tomorrow will look like.

Participants are then given colour cards on which they are asked to write down the variables they consider determinant for the system evolution (variables may have a positive or negative influence), with only one variable per card. The cards are then collected, read aloud and displayed on a white or magnetic board. Through a discussion with all participants, cards are first grouped together by broad categories. Progressively, cards covering the same idea are removed. Each action in this process requires a consensus between the participants on the elimination or retention of a card. In some cases, participants may be asked to clarify the meaning of the words they wrote.

At the end of this process, the result is a list of variables (Box 24). Each variable is given a letter or number for later reference.

Box 24.

Defining a strategy for the development of the pig commodity chain in the Red River Delta, Viet Nam: a prospective workshop

(part 1)

In Viet Nam, a prospective workshop was organized with two aims: helping stakeholders reflect on possible evolutions for the pig commodity chain in the Red River Delta and derive, from there, a strategy to ensure proper development of the commodity chain in the 10-15 years to come.

The previous implementation of an institutional survey helped the organizers select a group of participants who combined both a genuine knowledge of the commodity chain and a sufficiently broad and far-sighted understanding of what is at stake in this system. The participants included:

- Farmers' representatives.
- One of the main slaughterer-wholesalers around Hanoi.
- A representative of Hoai Duc district (Ha Tây province).
- A representative of Vu Ban district (Nam Dinh province).
- A representative of Hai Hau district (Nam Dinh province).
- A representative of Ha Tây agricultural bureau.
- A representative of the Market Information Centre of the Ministry of Agriculture.
- A representative of the Central Committee for Economy.
- A representative of the Government Secretariat.
- A representative of the Viet Nam National Livestock Corporation.

Continued

Box 24. (continued)

Defining a strategy for the development of the pig commodity chain in the Red River Delta, Viet Nam: a prospective workshop (part 1)

The workshop lasted three days. On the first day, the participants defined a list of 25 variables strongly influencing the future of the pig commodity chain (the numbers in front of each variable are not related to any form of ranking):

1. State orientation for the development of the pig commodity chain.
2. Policy mechanisms adapted to the situation of the commodity chain.
3. Co-ordination between pig producers, processors and traders.
4. Research and development of solutions for pig marketing and trading.
5. Diffusion of information on markets to pig producers, processors and traders.
6. Development of market oriented production zones.
7. Pig production scale.
8. Improvement of pig raising techniques in general.
9. Availability and use of lean pig breeds.
10. Production and use of balanced feeds.
11. Disease prevention and cure.
12. Pig product quality.
13. Hygiene at slaughterer level.
14. Processing technology after slaughtering.
15. Production cost competitiveness.
16. Research of customers.
17. Development of exportation.
18. Organization of pig collecting groups.
19. Organization of a broad marketing and retailing system.
20. Consumers' demand on quantity and quality.
21. Designing and controlling pig product quality criteria.
22. Ensuring food safety of pig products.
23. Standards of living and education level of the Vietnamese population.
24. Pollution from production or processing effluents.
25. Market infrastructures.

Assessing the influence of variables on each other

Once variables have been defined, the participants are asked to estimate the influence of each variable on the others. To do so, a table similar to Table 34 is filled by the participants. This table derives from the structural analysis matrices of prospective studies. In this table, all relevant variables of the system are listed both in columns and rows. At the intersecting cell a weight is given in order to characterize how far one variable has an influence on another.

Table 34. Example of influence/dependence table for prospective analysis workshops

Influence of: on:	Variable 1	Variable 2	Variable 3	Variable 4
Variable 1		1		
Variable 2			1	2
Variable 3	2			
Variable 4		3		2

The guidance team distributes to each participant a blank table with the references of each variable as headings of rows and columns. Starting with the first variable, participants have to estimate individually how much the first variable influences the others giving a score between 0 (no influence) and 3 (strong influence). It is recommended, at this stage, to ask participants to fill in the cells where there is no influence first (with 0). This emulates the reflection of participants and enables to have more contrasted results.

The influence estimations are then uncovered using cards with numbers from 0 to 3 raised by the participants. If all participants agree on an influence level, the result is directly filled in the table. If difference of estimation exists, they are discussed openly until a consensus is reached. Once the influences of the first variable on other variables has been estimated and results filled in the table, the same process is followed for the second variable and so on until the influence of all variables has been assessed (Box 25).

This process takes time but can be eased by the use of magnetic boards on which the variables can be arranged according to how much they are influenced by a chosen variable. This use of a board with cards for the variables can help participants better visualise the process of influence estimation and give more contrasting results making the following analysis easier.

Box 25.

**Defining a strategy for the development of the pig commodity chain in the Red River Delta,
Viet Nam: the organization of a prospective workshop
(part 2)**

After the definition of variables presented in Box 24, the participants estimated the influence of variables on each other. This stage of the workshop took one full day and led to the following table presenting the influence of the variables in the first column (referenced as indicated in Box 24) on the variables of the first line (same references as in the first column).

Table 35.

OF↓ ON→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1		3	2	3	2	3	3	2	2	2	2	2	1	2	2	2	3	2	2	1	2	2	2	2	2
2	3		3	3	2	3	3	2	2	2	1	2	2	2	2	2	3	2	2	1	2	2	1	2	2
3	2	3		2	2	3	3	2	2	2	2	2	2	2	3	3	3	2	2	1	2	2	1	2	2
4	2	2	2		3	3	3	3	3	2	2	2	2	3	3	3	3	2	2	2	2	2	1	2	2
5	1	1	2	3		2	2	2	2	1	2	2	2	2	2	3	3	2	1	1	2	1	2	1	1
6	2	2	2	2	2		3	3	2	3	3	2	2	3	2	3	2	2	1	3	2	2	2	2	2
7	2	2	2	2	2	3		3	3	3	3	2	2	2	3	3	3	2	2	2	2	2	2	2	2
8	2	2	2	2	2	2	3		3	3	3	3	2	2	3	2	2	2	2	1	3	3	2	2	1
9	2	2	2	3	2	3	3	3		3	3	3	2	2	3	2	3	2	1	2	3	2	2	2	1
10	2	2	2	1	1	3	3	3	3		2	3	1	2	3	2	3	2	2	2	3	2	2	2	1
11	1	1	2	1	1	3	3	2	2		3	2	2	2	1	3	1	1	2	3	3	2	3	1	1
12	1	2	2	2	2	3	3	3	3	3		2	2	3	3	3	2	2	2	3	3	2	2	2	1
13	1	1	1	1	1	2	2	2	2	1	3		3	2	2	3	1	1	2	3	3	2	3	1	1
14	2	2	2	2	2	2	2	2	2	2	2	3		3	3	3	1	2	2	3	3	2	2	1	1
15	2	2	2	2	1	3	3	3	3	3	2	3	2		3	3	2	2	2	3	2	1	2	2	2
16	2	2	2	3	3	3	3	2	3	2	2	2	2	2		3	2	2	2	2	2	2	1	1	1
17	2	2	2	3	3	3	3	2	3	3	3	2	3	3	3		2	2	2	3	3	2	2	2	2
18	1	1	2	2	2	3	3	2	2	2	1	2	1	1	2	2	3		2	2	2	1	1	1	1
19	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2		2	2	2	1	2	2
20	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	2	2		2	2	2	2	1
21	1	1	1	1	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2		2	2	2	2	1
22	1	1	1	1	1	2	2	2	2	2	2	2	3	2	2	3	2	2	2	3		2	3	1	1
23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		2	2	2
24	1	1	1	1	1	2	2	2	2	2	3	2	3	2	2	2	3	2	1	2	3	3		2	2
25	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Determining the most influential variables

As indicated in Table 36, the global influence and dependence of each variable can be derived from a table like Table 35. From there, matrix calculation is used to assess the indirect

influence of each variable on the others (p. 64). This calculation is done in the same way as for the analysis of key actors in the PACT method (Box 9, p. 38)

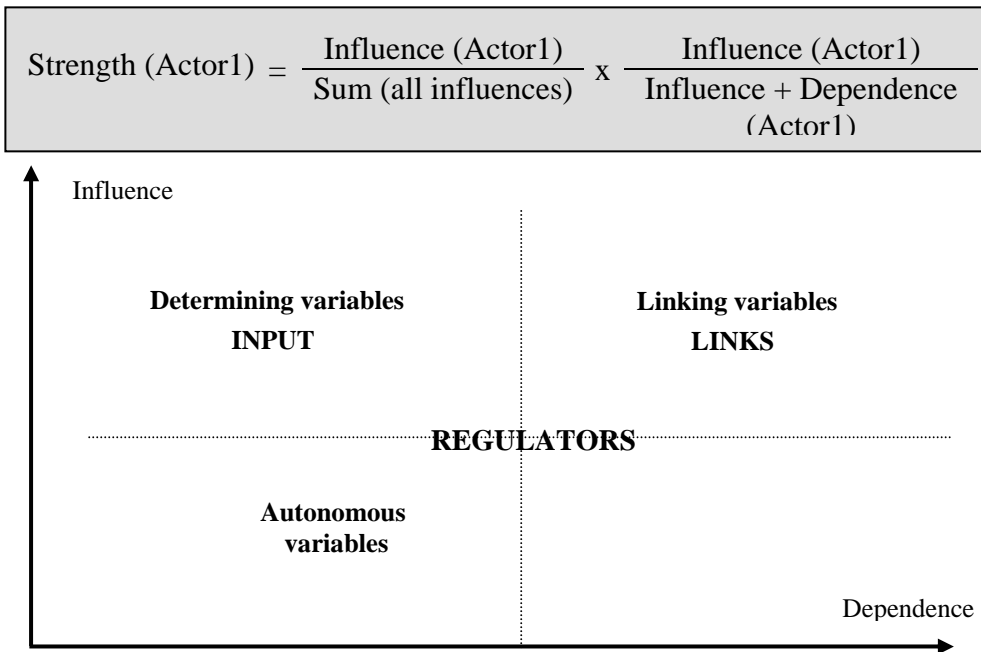
Table 36. Example of influence/dependence table resulting from prospective analysis meetings

Action of: on:	Variable 1	Variable 2	Variable 3	Variable 4	Total dependence
Variable 1		1			1
Variable 2			1	2	3
Variable 3	2				2
Variable 4		3		2	5
Total influence	2	4	1	4	11

Most of the time, direct influences represent the usual vision of stakeholders, i.e. what they consider as important today, whereas indirect influences show determining factors whose importance is not easily seen by them. In fact, indirect influences often represent the unforeseen aspects that will have a determining role in the future.

To visualize the role of each variable in the system, a graph of influence and dependence can be drawn to map the position of each variable as indicated in Figure 14. Another way to assess this role is by calculating the strength of each variable, i.e. its potential power of influence. The formula below indicates how this influential power, called “strength” coefficient, is calculated. As the formula indicates, this coefficient grows with the influence of the variable and decreases when the variable’s dependence gets high.

Figure 14.



Box 26.

**Defining a strategy for the development of the pig commodity chain in the Red River Delta,
Viet Nam: the organization of a prospective workshop
(part 3)**

Using the results of Table 35, the direct and indirect strength of each variable was estimated (Table 37 and Table 38). As pointed out previously, the most influential and least dependent variables appear with the highest scores.

The variables that are “strong” through direct influences (Table 37) are often obvious to stakeholders: the development of pig marketing and trading, reinforcement of exportation, government orientation and policies, production of quality pigs (lean pigs), integration of production processing and trading and the development of lean pig breeds.

Table 38 shows that the variables with a high indirect strength, which are likely to play a major and unforeseen role in the future, are different. Among the indirectly strong variables, one still finds government orientation and policies, but three groups of variables appear to be stronger than previously evaluated. These are variables related to the co-ordination among actors of the commodity chain (organization of pig collection, of a marketing and retailing system and co-ordination from production to retailing), the variable of consumer demand and the variable of pollution from pig production or processing. These variables, because of their indirect influence, are not currently perceived as determinant but may well change the shape of the pig commodity chain in the future.

Table 37.

	Leveled global strength	
1	State orientation for the development of the pig commodity chain	1.15
2	Policy mechanisms adapted to the situation of the commodity chain	1.11
3	Co-ordination between pig producers, processors and traders	1.11
4	Research and development of solutions for pig marketing and trading	1.19
5	Diffusion of information on market to pig producers, processors and traders	0.84
6	Development of market oriented production zones	1.00
7	Pig production scale	1.05
8	Improvement of pig raising techniques in general	1.04
9	Availability and use of lean pig breeds	1.10
10	Production and use of balanced feed	1.01
11	Disease prevention and cure	0.86
12	Pig product quality	1.12
13	Hygiene at slaughterer level	0.88
14	Processing technology after slaughtering	1.06
15	Production cost competitiveness	1.05
16	Research of costumers	0.99
17	Development of exportation	1.18
18	Organization of pig collecting groups	0.80
19	Organization of a broad marketing and retailing system	0.97
20	Consumers' demand on quantity and quality	0.95
21	Designing and controlling pig product quality criteria	0.76
22	Ensuring food safety of pig products	0.87
23	Standards of living and education level of the Vietnamese population	1.01
24	Population from production or processing effluents	0.92
25	Market infrastructures	1.00

Table 38.

	Leveled global indirect strength	
	State orientation for the development of the pig commodity chain	1.19
	Policy mechanisms adapted to the situation of the commodity chain	1.17
	Co-ordination between pig producers, processors and traders	1.19
	Research and development of solutions for pig marketing and trading	0.96
	Diffusion of information on market to pig producers, processors and traders	0.97
	Development of market oriented production zones	0.98
	Pig production scale	0.98
	Improvement of pig raising techniques in general	0.96
	Availability and use of lean pig breeds	0.98
	Production and use of balanced feed	0.96
	Disease prevention and cure	0.98
	Pig product quality	0.98
	Hygiene at slaughterer level	0.98
	Processing technology after slaughtering	0.98
	Production cost competitiveness	0.96
	Research of costumers	0.96
	Development of exportation	0.99
	Organization of pig collecting groups	1.16
	Organization of a broad marketing and retailing system	1.16
	Consumers' demand on quantity and quality	1.14
	Designing and controlling pig product quality criteria	0.96
	Ensuring food safety of pig products	0.98
	Standards of living and education level of the Vietnamese population	0.70
	Population from production or processing effluents	1.07
	Market infrastructures	0.65

Nota bene: The highest level of strength are indicated with darker shades in both tables

Continued

Box 26. (continued)

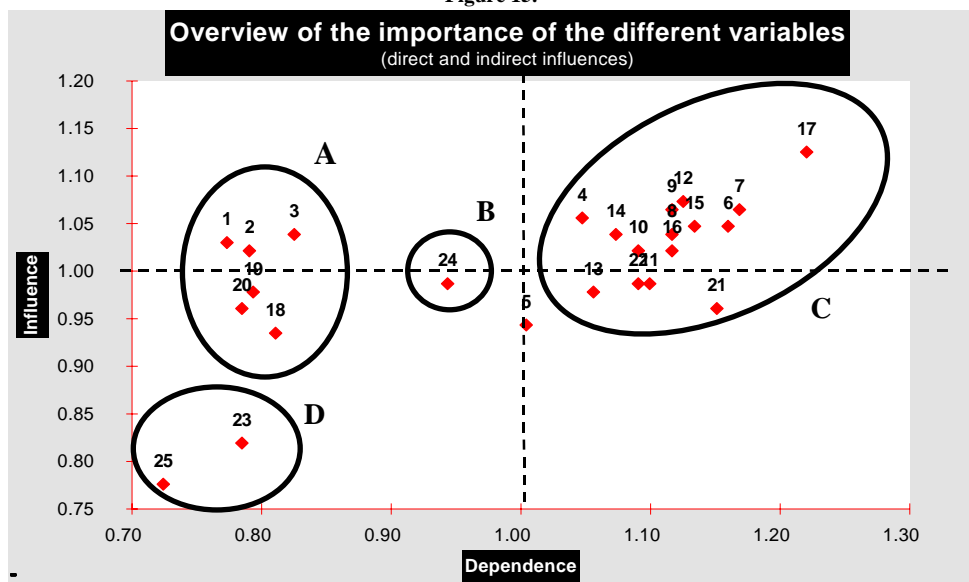
Defining a strategy for the development of the pig commodity chain in the Red River Delta, Viet Nam: the organization of a prospective workshop (part 3)

This result can be visualized on a graph as shown by Figure 15. There, four groups of variables appear: a first group of influential and almost not dependent variables (group A), a second group of influential and slightly more dependent variables (group B), a third group of variables both influential and dependent (group C) and a fourth group of variables with low dependency from and low influence on the system (group D).

The discussions on the possible evolutions of the pig commodity chain focused on the possible changes of the variables within group A:

- Orientation of the State for the development of the pig commodity chain.
- Policy mechanisms adapted to the condition of the commodity chain.
- Co-ordination between pig producers, processors and traders.
- Organization of pig collecting groups.
- Organization of a broad marketing and retailing system.
- Consumers' demand on quantity and quality.

Figure 15.



Designing contrasted scenarios

Once the key variables for future evolution have been defined, participants are guided in designing possible evolutions for the system.

To do so, participants are first asked to define possible future states for each of the key variables. The guidance team distributes colour cards to each participant asking them to write down possible states for each key variable, with only one state for one variable per card. As in the first step, cards are collected, read aloud and displayed and discussed. The final result is usually 2 to 4 possible states for each key variable. Then, participants are asked to consider which combination of these states is likely to occur i.e. which state of the first key variable is likely to occur simultaneously with which state of the second key variable, with which state of the third key variable and so on. As before, participants write these possible combinations on

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colour cards, which are collected and displayed after that. The result is a list of combinations including one state for each key variable. Each combination describes a possible scenario of evolution for the system (Box 27).

Box 27.

**Defining a strategy for the development of the pig commodity chain in the Red River Delta,
Viet Nam: the organization of a prospective workshop
(part 4)**

Following their identification (p. 101), the key variables were arranged in three groups to facilitate discussion. These three groups were defined as follows:

- A first group with the variable “Consumer demand on quantity and quality”.
- A second group concerning government orientation and policies regarding pig products, assembling the variables “Orientations of the State for the development of pig” and “Policy mechanisms adapted to the situation of the commodity chain”.
- A third group concerning stakeholders’ relations within the pig commodity chain, assembling the variables “Co-ordination between pig producers, processors and traders”, “Organization of pig collecting groups” and “Organization of a broad marketing and retailing system”.

The different possible states of each group of variable are presented in Table 39.

Table 39.

Key variables	Possible states for the key variables		
Consumers’ demand for pig products	I.A. Increasing both in quantity and quality	I.B. Increasing in quality	I.C. Increasing in quantity
Government orientation and policies	II.A. Pig development policy strongly reducing production costs ^a	II.B. Pig development policy unable to reduce production costs ^a	
Stakeholders’ relations	III.A. Strong co-ordination among stakeholders through the definition of farmer production groups and the implementation of contracts between farmers and traders	III.B. No change from the current situation, production and trade following simple market mechanisms	III.C. One actor developing an integrated system from production to retailing without the participation of existing farmers or traders

^a For example, the main cost of pig production being feeds, a policy reducing import taxes for corn and soybean would contribute to reduce production costs.

Participants were then asked individually to write down contrasted combinations of these variables’ states, with a maximum of three combinations considered plausible for each person. Once collected, a total of 9 combinations came out, defining 9 possible scenarios according to the participants. They are listed below, ranked from the scenario with the least change to the scenario with the most change compared to today’s situation:

- | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|
| Scenario 1: II.B. – III.B. – I.A. | Scenario 4: II.A. – III.B. – I.A. | Scenario 7: II.A. – III.A. – I.B. |
| Scenario 2: II.B. – III.A. – I.A. | Scenario 5: II.A. – III.B. – I.C. | Scenario 8: II.A. – III.C. – I.A. |
| Scenario 3: II.B. – III.A. – I.B. | Scenario 6: II.A. – III.A. – I.A. | Scenario 9: II.A. – III.C. – I.B. |

Analyzing the consequences of each scenario and then deriving a strategy

Once scenarios have been defined, the next step of a prospective workshop is to invite participants to reflect on the probable consequences of each scenario. Starting the discussion from the scenario with the least change compared to today’s situation to end with the situation with the most change helps participants analyze the advantages and disadvantages of each future path.

At the end of this session, it is possible to draw a list of the favourable situations for the system along with a list of the important risks that might affect the system in the future. The guidance team, then, using colour cards, asks the participants to design actions aimed at materialising favourable situations and avoiding potential risks.

From this point, the participants can propose a path enabling the implementation of these actions. This path should include the role of each stakeholder, the co-ordination mechanisms and the means necessary to put all this into operation.

Box 28.

**Defining a strategy for the development of the pig commodity chain in the Red River Delta,
Viet Nam: the organization of a prospective workshop
(part 5)**

Based on the different scenarios listed in Box 27, participants’ discussions revealed different consequences related to each scenario as presented in Table 40.

Table 40.

Scenarios	Short description of scenario	Consequences of scenario
1 II.B. – III.B. – I.A.	No change in production costs and actors’ relations. Stronger demand for pig products in quantity and quality.	Slow development of pig production. Possible imports competing with Vietnamese production rendering the situation more difficult for farmers and local traders.
2 II.B. – III.A. – I.A.	No change in production costs. Strong co-ordination among actors. Stronger demand for pig products in quantity and quality.	Stronger development of production. Possible imports competing with Vietnamese production rendering the situation more difficult for farmers and local traders.
3 II.B. – III.A. – I.B.	No change in production costs. Strong co-ordination among actors. Stronger demand for pig products in quality.	Same production development as previous scenario. Strong imports competing with Vietnamese production and trading, exportation very difficult. Risks much higher than previous scenario because of a demand focused on quality.
4 II.A. – III.B. – I.C.	Decrease of production costs. No change in actors’ relations. Stronger demand for pig products in quantity.	Pig production is developing. Competition among farmers and traders may lead to lower prices for consumers, but may well also keep farmers’ and traders’ income at their current low level. Good ability to compete with importation.
5 II.A. – III.B. – I.A.	Decrease of production costs. No change in actors’ relations. Stronger demand for pig products in quantity and quality.	Pig production is developing. Competition among farmers and traders may lead to lower prices for consumers, but may well also keep farmers’ and traders’ income at their current low level. Competition with imports easier on prices but not yet sufficient on quality.

Continued

Continued

Box 28. (continued)

**Defining a strategy for the development of the pig commodity chain in the Red River Delta,
Viet Nam: the organization of a prospective workshop
(part 5)**

Table 40. (continued)

Scenarios	Short description of scenario	Consequences of scenario
6 II.A. – III.A. – I.A.	Decrease of production costs. Strong co-ordination among actors. Stronger demand for pig products in quantity and quality.	Good opportunity of development for traders and farmers. Competition from imports and difficulties to export still exist if no improvement is made on quality.
7 II.A. – III.A. – I.B.	Decrease of production costs. Strong co-ordination among actors. Stronger demand for pig products in quality.	Good opportunity of development for traders and farmers. Competition from imports and difficulties to export stronger since demand is focused on quality.
8 II.A. – III.C. – I.A.	Decrease of production costs. Integrated production-marketing system. Stronger demand for pig products in quantity and quality.	Good development of pig production, favourable to consumers and better for competition with exports. Strong difficulties faced by farmers and traders in competing with such an integrated system.
9 II.A. – III.C. – I.B.	Decrease of production costs. Integrated production-marketing system. Stronger demand for pig products in quality.	As previous scenario, but with stronger competition from imports and difficulties to export since demand is focused on quality.

Among the nine scenarios, the most favourable situation corresponds to scenario 6 where consumers' demand increases both in quantity and quality, where the government orientation and policies manage to decrease pig production costs and where actors construct an efficient co-ordination system.

Besides this favourable situation, three types of risks were also revealed by the analysis of the scenarios.

The first risk concerns the ability of the Vietnamese pig product prices to compete with those of other countries. Higher price levels in Viet Nam would mean an increase of imports of pig products, less activity for farmers and local traders and no possibility to export.

A second similar risk concerns the quality of pig products. If the actors within the commodity chain do not manage to improve their product quality, competing with other countries' products will be very difficult, especially if the demand focuses on quality.

The third risk relates to the possible development of integrated systems of pig production and meat retailing that would not involve existing producers and traders. Such a situation would also lead to less activity for farmers and local traders.

Continued

Box 28. (continued)

**Defining a strategy for the development of the pig commodity chain in the Red River Delta,
Viet Nam: the organization of a prospective workshop
(part 5)**

The participants then proposed actions to promote the materialization of scenario 6 and reduce the occurrence of the risks listed above. These proposals are presented in Table 41.

Table 41.

	Favourable or risky situation	Actions proposed
Favourable outcomes	Consumers' demand increases in quantity and quality	<ul style="list-style-type: none"> ▪ Projects and policies aimed at global income increase. ▪ Information and advertisements to promote consumption of good quality and processed products. ▪ Investment in infrastructure (Keynesian policy).
	Government policy reducing production costs	<ul style="list-style-type: none"> ▪ Decrease import taxes on feed sources (corn, soybean, etc.) or incentives for the development of their production in Viet Nam. ▪ Promote production of leaner breeds by farmers. ▪ Promote and facilitate local feed processing. ▪ Increase diffusion of information on veterinary products and use of balanced feeds.
	Co-ordination among actors of the commodity chain	<ul style="list-style-type: none"> ▪ Construct contracts between producers, processors and traders. ▪ Build farmer production groups to facilitate contracts. ▪ One actor to take the lead in co-ordinating the different actors.
Risks to be avoided	Competition with foreign product on prices	<ul style="list-style-type: none"> ▪ Co-ordinated decrease of production costs and increase of importation taxes for pig products. ▪ Production of a quality of pig products adapted to Vietnamese consumers' taste.
	Competition with foreign product on quality	<ul style="list-style-type: none"> ▪ Clear quality criteria included in the above-mentioned contracts between actors of the commodity chain.
	Integrated system without farmers and traders involvement	<ul style="list-style-type: none"> ▪ Promote the diffusion and development of the above-mentioned contract and co-ordination system.

Beyond the prospective workshop: designing concrete actions with stakeholders

As mentioned previously, having stakeholders gathered in a prospective workshop during 3 to 4 days to discuss the future of their system is very likely to foster the emergence of a common vision of the changes needed. Stakeholders are assisted in identifying future stakes and consensus is built on how to avoid important risks and how to construct collaborative paths of action. In the case of the prospective workshop on the pig commodity chain in Viet Nam, this is exactly what happened.

Once the whole process described above was completed, participants were asked to consider what action from them could come next. Quite rapidly and easily, discussions started on building a pilot "model" of co-ordination among farmers and traders-processors along with the support of local and national authorities.

These discussions led to the design of the following pilot co-ordination system:

- Farmers of a commune in Ha Tây province agreed to organize themselves in a production group under the authority of the head of the commune to facilitate relations with traders and authorities.
- The slaughterer-wholesaler and the farmers agreed to design a contract on quality pig production and collection ensuring higher quality, higher prices and more stable production and collection.
- The provincial agriculture bureau agreed to support the project by providing technical information, advice and support to ensure higher production quality and efficiency.
- Several government representatives agreed to support the project by facilitating contacts with foreign customers, by broadcasting information on the system and by facilitating advertisements to local consumers.
- The Viet Nam Agricultural Science Institute agreed to monitor and support the project by providing advice on organization modes and techniques.

The different actors met several days later at the slaughterer-wholesaler place in order to understand better his activity. There, further discussions occurred on the contract design and the actors are now continuing the establishment of this pilot system.

Similarly to policy arena workshops (Chapter IV: Arena for stakeholder participation ..., p. 82), prospective workshops are designed to help common decision-making processes. While discussions within policy arena workshops are based on the result of the PACT institutional analysis method, prospective workshops provide opportunities for a stronger involvement of stakeholders. They allow them to collectively construct their own identification of future stakes and to draw up their own conclusions regarding the implications of these stakes. This stronger involvement of stakeholders in the diagnosis process reinforces their will to design effective decisions and their commitment to the implementation of these decisions.

Exploring scenarios with simulations

Although prospective analysis tools and simulation models are both designed to reflect on future prospects, they should be considered more as complementary than as substitutable. First, the qualitative scenarios resulting from prospective analysis tools can be quantitatively explored with simulation tools. Second, strategies imagined by stakeholders within prospective workshops can be further assessed and evaluated through simulations. In both cases, it is possible to provide more precise insights for decision-making on features specifically considered within the simulation model used.

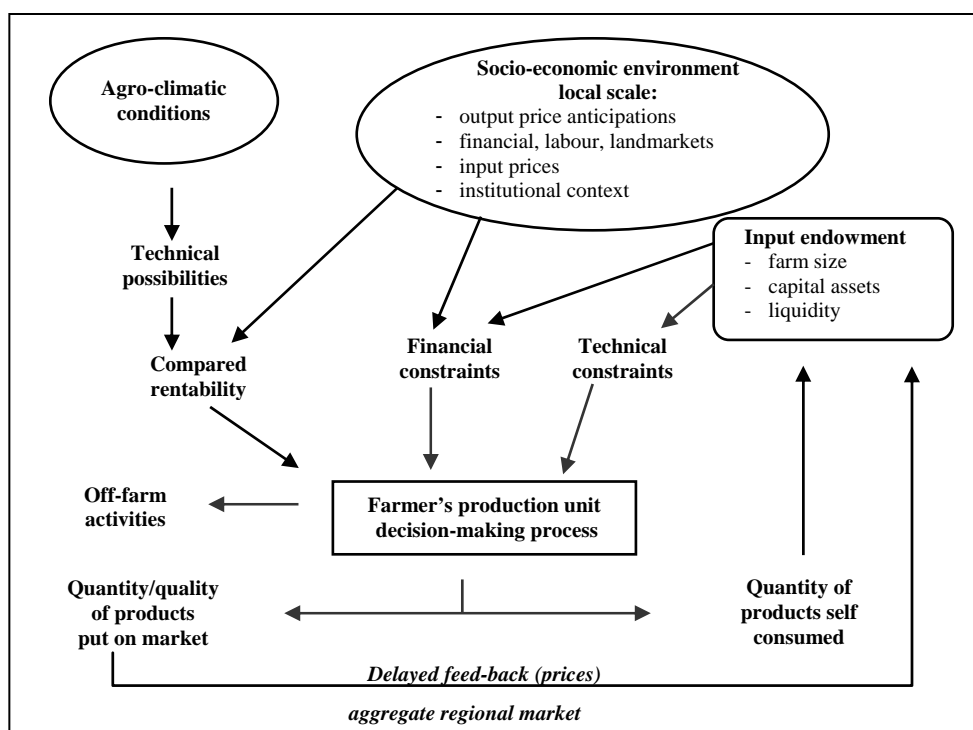
The use of simulation is more time consuming than workshop implementation and a lack of time did not enable to use them during the Ecolpol project. Still, their potential interest and complementarity with the previous phases substantiate their inclusion within the RAINAPOL approach. Three simulation tools included within the approach are presented hereafter: the first one focuses on farmers' economic behaviour, the second on commodity chain cost and margin distribution and the last one on stakeholders rules of interaction. Though they were not directly used for the Ecolpol project, illustrations of their use and results are presented to allow a better understanding of their potential interest in a public decision process.

Simulation with the “Multi-Level Analysis Tool for the Agricultural Sector” model (MATA)

MATA is an economic simulation model using different modules to represent the behaviour of economic agents in the agricultural sector (Gérard *et al.* 1998). It allows simulation of the effects of various economic policies on different types of economic agents and on agricultural production.

The main module of the model concerns farmers’ economic behaviour. The basic structure of this module is indicated in Figure 16. This module has interesting specificities: it enables to take into consideration different types of farmers, risk adverse behaviours, delays between production decisions and price setting and cumulative effects of evolutions through a multiple year running frame.

Figure 16.



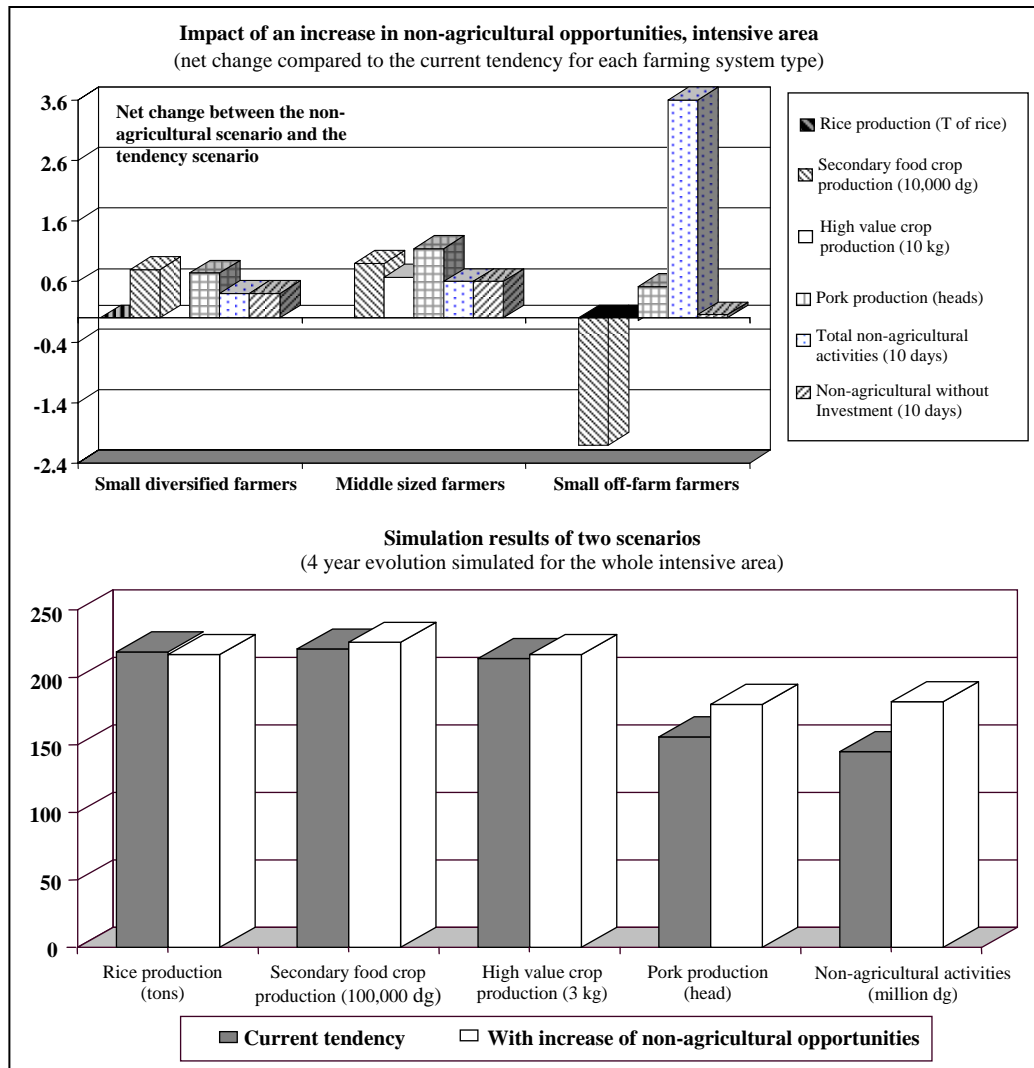
The model is associated with a user-friendly simulation and result visualization platform. Through this platform, simulations can be made by entering modifications of economic parameters year by year and subsequent results can be observed through comprehensive graphs. This platform constitutes the second module of the model where the evolution of the socio-economic environment can be entered to analyze its effect on farmers and agricultural production.

Figure 17 below illustrates the type of results that can be obtained from of a simulation with the MATA model. It shows simulation results for the impact of an increase in non-agricultural opportunities in the Red River Delta, Viet Nam, for different types of farms and for the whole region. Three main types of farm households are considered in this example. They have various combinations of the following activities: rice, secondary food crops, high-value

crops (vegetables), pig raising and cattle raising (for traction), as well as non-agricultural activities that are capital-based and/or labour-based.

At the farm level, the results show how a similar change of the economic environment can differently affect the various types of farmers. In the case considered, an increase of non-agricultural activities strongly affects farmers with little land and important off-farm activities (small off-farm farmers) who reduce secondary food-crops (such as corn, soybean, etc.) to take advantage of these new opportunities, while for the other farmers it seems to foster the development of almost all production. At the region level, the global effect of an increase in non-agricultural opportunities is a slight decrease in rice production and an increase in all other productions.

Figure 17.



In the MATA model, the producers' module can be combined with a consumers' module to simulate price variations linked to agricultural products' offer and demand interactions (Gerard *et al.*, 1998). Furthermore, crop growth models can be linked to the MATA framework in order to simulate the effect of agricultural production systems on the environment and the reverse effect of environment conditions changes on agricultural production (Deybe, 1994).

The use of a MATA model can prove useful for situations where changes of economic factors are of prime importance and when their potential effects are subject to controversies. A MATA model can then provide insights on these potential effects both at the global level and for the different types of producers. Simulations can be made and discussed with stakeholders to help them reflect on the risks of specific changes in their economic environment or to help them assess the potential interest of one or several courses of action involving important economic stakes.

A proper and successful use of such a model supposes sufficient attention has been paid to the relevance of the subject to be tackled with it and to its practical implementation. First, the changes to be simulated have to be of an economic nature and it must be possible to translate them into the variables considered in the model. Doing otherwise would involve important speculations that can easily be subject to controversies among stakeholders or that can even lead to erroneous conclusions. Second, the construction of the model requires sufficient data of good quality and a steady and committed team. The previous phases of the RAINAPOL approach can easily provide the necessary data, but the strength of the team depends on the will and means to engage in the modelling process.

Simulation with the method “Commodity-Systems and Dialogue for Action” (CADIAC)

CADIAC is a multi-level economic representation of a commodity system, of its operators and its functioning, enabling the construction of a dialogue between actors in order to improve co-ordination processes and performance of the whole system (Bourgeois and Herrera, 2000).

The CADIAC approach consists of two phases. The first one is a phase of participatory research, based on the systemic concept of the commodity chain. It aims at characterizing the strengths and weaknesses of the commodity chain. The second phase is called “dialogue for action”. It promotes dialogue and debate between actors about the changes to be carried out in order to improve the competitiveness of the commodity chain.

Several elements of the CADIAC approach have been included in the RAINAPOL approach and presented in the previous chapters. They concern commodity chain analysis (Chapter III: Commodity chain analysis, p. 45), farmers' participatory typologies (p. 22) and validation meetings (p. 79). An additional CADIAC tool helps to design and discuss simulations with stakeholders and will briefly be presented hereafter.

The commodity chain analysis phase of the CADIAC approach has five levels: the links with the international environment; the links with the national environment; the structure of the commodity chain; the functioning of the commodity chain and; the aggregation and interpretation of results. Within the fifth level, the elaboration of scenarios of change and simulations allows the projection of the representation of the commodity chain into the future.

This approach is used for the purpose of establishing policies to enhance the competitiveness of a commodity chain. It discusses the determining factors of production, transformation and marketing costs, including the effects of input trade and service provision, the relationships between producers and buyers, the context of world environment and regional trade, and the feasibility of changes as far as public institutions and private organizations are concerned.

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Scenarios are defined as combinations of changes within these elements. Simulations calculate the potential effects of these changes using indicators of performance (for instance protection coefficients or competitiveness indicators). The obtained results can then help stakeholders discuss the interest of making decisions that would imply the simulated changes.

The structure of such a model is briefly presented in Box 29. It is followed by an illustration of application and results in the case of the rice commodity chain in Costa Rica.

Box 29.

Structure of a simple model for scenario simulation in a commodity chain

The model is made of several linked pages or worksheets under Excel. These are roughly divided in three parts:

- A first part where the user enters the data describing the situation of the different types of stakeholders considered for simulation and where the marketing links are formalized.
- A second part where the user enters the modification of factors to be simulated (worksheet called "Simulations").
- A third part where the user can analyze the results of the simulation with various indicators presented in a synthetic way (worksheet called "Results").

In the worksheet called "Simulations", all the variables that can be used for the construction of scenarios are presented. The values of these variables (exchange rate, interest rate, FOB value, etc.) can be modified in order to simulate the effect of such changes. Some of these variables affect only real prices or only shadow prices; others affect both, directly or indirectly.

The worksheet called "Results", presents the results obtained through the simulations applied in one scenario. It includes several tables through which simulation results can be compared to an initial situation, or to a reference point for the costs, prices and margins as well as for protection and competitiveness. These tables concern:

1. Policy Analysis Matrix (to assess competitiveness using shadow prices).
2. Income, costs and margins distribution (for private costs) along various marketing circuits.
3. Comparative summary of income, costs and margins distribution in each circuit.

All data and intermediary results can be checked from a main menu with buttons referring to the corresponding tables as indicated in the illustration of Box 30.

Box 30.

Menu of a commodity simulation model

I. Simulations and results

Go to Simulations (Ctrl S)
This command sends the user to the tables where simulation variables can be modified

Go to Scenarios – Results (Ctrl R)
This command sends the user to the output tables where results of the scenarios simulated are compared to the reference situation

II. Checking Results

Private and economic Factors (Ctrl F)

This sheet contains four tables:

1. General factors and costs (market and shadow prices) - determines general aspects affecting private and economic prices: exchange rates, interest rates, FOB values for inputs and some domestic prices and estimations of internalization costs of input for shadow prices.
2. Production and industrial transformation data for different types of farms and industries: area, yield, sales, purchases, number of farms/industries, etc.
3. Import costs and costs for import parity calculations for the agricultural and transformed products (includes FOB values, transportation costs, exchange rates, etc.).
4. Estimation of input import costs for market prices (includes FOB values of some inputs and their internalizations costs: transport, insurance, tariffs, etc).

Private and economic Costs (Ctrl C)

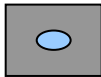
This sheet has four tables (for the case of two farm types and two industry types). For each type of farm or industry, the tables present:

1. The structure of agricultural costs at market and shadow prices.
2. The calculation of the output price at market and shadow prices.

Costs Appendices (Ctrl A)

This sheet has two sections, one for farms and one for industries. In each section, several tables help compute intermediary values for cost calculation:

1. Financial and administrative costs.
2. Intermediary costs.
3. Depreciation.

Clicking on this icon allows you to return to the Main Menu → 

A model with two farm types and two industry types has been developed with data taken from the rice production sector in Costa Rica (Herrera *et al.*, 1999). The so-called “small farms” and “big farms” are operated differently; they generate different outputs and have different productivity levels. Furthermore, their links to the industry differ. “Small farms” have links to “traditional small agro-industries (mills)” and also with the “modern big industries (mills)”, while “big farms” are only related with the latter. These characteristics are entered in the model including the links between farms and industries. This model (now a training tool) is a simple (static) quantitative representation of a rice commodity chain and can be used to explore alternative policy options represented by the values inputted in the “Simulations” worksheet.

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This type of tool is helpful to show the heterogeneous impact of a policy decision in a commodity chain, due to the heterogeneity of the actors. This model for instance includes two types of farms representative from the rice production system and two types of industries also representing the main types found in the country.

The so-called "small farms" and "big farms" are operated differently; they generate different outputs and have different productivity levels. Furthermore, their links to the industry differ. "Small farms" have links to "traditional small agro-industries" and also with the "modern big industries", while "big farms" are only related with the latter. These characteristics are entered in the model including the links between farms and industries.

A simple example of how this type of model can be used is displayed below. In the "Simulations" worksheet Module 1 and Module 2 (Table 42), two new values are entered: a new farmer price paid at mill's gate (50,000 local currency units instead of 38,923 or 28.5 per cent increase) and, linked to this price increase, a new selling price for big millers established at 100,000 instead of 80,000 (25 per cent increase).

Table 42.

Module 1: Price of agricultural product at market prices	Original value	Simulation
Delivery price at mill's gate (m.l./tm)	38,923	50,000

Module 2: Price of processed product t market prices	Original value	Simulation
Selling price at mill's gate	80,000	100,000
Wholesaler gross margin	1.10	1.10
Wholesale price	88,000	110,000
Retailer margin	1.10	1.10
Consumer price	96,800	121,000

The "Results" worksheet displays, among other indicators, the distribution of costs, benefits and income share among the different actors according to various circuits. In this case, three circuits coexist in the rice chain: one links big farms and modern mills, and two link small farms to either modern or traditional mills.

The results (Tables 43) show that the impact of the new sustained farm price varies among circuits. For instance, the net income share of farmers is strongly modified by the price changes of the new scenario. In the original situation, the biggest utility share for farmers was gained in circuit 1 before 3 and 2. With price changes, after simulation, circuit 3 and 2 provide the highest net income share before circuit 1. In terms of redistribution of utility, small farms would benefit more than big farms from a policy that induces such price changes. This is due to the fact that although the small farms get lower yields they operate with lower costs.

Table 43.

Summary channel 1: “Big farm” to “Modern mill” at market price

	Costs		Net income		Share of consumer price	
	Original	Scenario	Original	Scenario	Original	Scenario
I. Farm level	62.10%	59.60%	23.00%	49.85%	52.69%	56.02%
II. Transport from farm to mill	10.85%	10.41%	0.00%	0.00%	8.24%	6.59%
II. Mill level	15.73%	16.41%	40.61%	26.29%	21.72%	20.04%
III. Wholesaler	6.53%	7.83%	13.73%	9.01%	8.26%	8.26%
IV. Retailer	4.79%	5.75%	22.66%	14.86%	9.09%	9.09%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 44.

Summary channel 2: “Small farm” to “Modern mill” at market price

	Costs		Net income		Share of consumer price	
	Original	Scenario	Original	Scenario	Scenario	Original
I. Farm level	62.94%	60.48%	12.69%	53.52%	54.81%	58.38%
II. Transport from farm to mill	10.76%	10.34%	0.00%	0.00%	9.02%	7.22%
II. Mill level	14.96%	15.56%	38.82%	20.51%	18.82%	17.05%
III. Wholesaler	5.92%	7.11%	20.42%	10.94%	8.26%	8.26%
IV. Retailer	5.42%	6.51%	28.07%	15.04%	9.09%	9.09%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 45.

Summary channel 3: “Small farm” to “Traditional mill” at market price

	Costs		Net income		Share of consumer price	
	Original	Scenario	Original	Scenario	Original	Scenario
I. Farm level	59.69%	57.80%	17.68%	59.93%	52.75%	58.38%
II. Transport from farm to mill	18.36%	19.23%	0.00%	0.00%	13.12%	10.49%
II. Mill level	18.36%	19.23%	20.87%	13.61%	20.71%	17.71%
III. Wholesaler	1.96%	2.37%	22.35%	9.62%	4.33%	4.33%
IV. Retailer	5.14%	6.23%	39.11%	16.84%	9.09%	9.09%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Such a model, built from real data obtained within the framework of the commodity chain analysis of the CADIAC method, has several applications. It helps explore the impact of projected changes on the level and distribution of welfare among different actors and along different marketing channels. It also allows representing differentiated impacts of general policies such as tariff policies or exchange rate policies. It is thus a tool for discussion and negotiation between policy makers manipulating macroeconomic variables and stakeholders who are affected by these variables. The inclusion of protection, subsidies and competitiveness indicators derived from the classical Policy Analysis Matrix makes it also useful to assess the performance of one sector compared to its international competitors, and understand the reason of a given competitive position.

Simulation with Multi-Agent Systems (MAS)

Multi-Agent System models are made up of a computerized set of agents evolving in a computerized common environment (Bousquet *et al.*, 1993 and Ferber, 1999). For each agent, behavioural rules are defined. These rules enable to simulate how the agents act, react and interact with their surrounding environment. Rules can also be designed to simulate communications among agents. Agents can be stakeholders, natural elements or whatever entity for which rules of behaviour, reactions, interactions can be defined. The programming of agents and their environment is based on cellular automata language that enables reproduction, in a simplified way, of the complex behaviour observed in the real world. It makes it possible, in particular, to study how simple behavioural rules, at individual levels, combine to define more global properties and modes of evolution at the level of the whole system simulated.

Construction of multi-agent models for simulations in the field of policy analysis is a new domain, where little has been done so far. The design of MAS models is particularly adapted to represent interactions between stakeholders and to study the resulting outcomes. As thus, it could prove very useful to test institutional changes and reflect on their possible outcomes.

Although MAS models have not been used within the frame of the Ecopol project, the following illustration can provide insights on their potential. The model described in Box 31 tries to represent how limited communication and limited perceptions can affect policy decisions. The preliminary results presented underline the potentials of the approach.

Box 31.

Chaotic effects of limited perception in setting import tariffs

The objective of the model is to simulate how limited communication between stakeholders can affect the result of a policy decision. It is inspired by some characteristics of the rice sector in Indonesia. In this application, the decision of policy makers, considered as one agent, about the level of rice import tariffs is simulated. The simulation relies on a representation of the different stakeholders involved in the decision-making process and their rules of interaction.

The model includes the following agents:

- The policy maker (PM) representing the government.
- An outside international organization (1 agent).
- Importer groups (2 separate groups defining 2 agents).
- Traders (3 separate types of traders defining 3 agents).
- Consumers (6 separate types of consumers defining 6 agents).
- Farmers (10 separate types of farmers defining 10 agents).

The model works as follows: the policy maker establishes a tariff level, according to the pressure exerted by other agents. The policy maker is represented as a fixed agent on a grid. The other agents are present on the same grid. The extent of the policy maker's perception of his environment, his level of awareness to the situation of the various stakeholders, can be changed. It is represented by how far on the grid his perception goes.

The other agents can move, and the level of last tariff conditions their moves. If they are not satisfied they get closer to the policy maker, if they are rather satisfied they don't move, if they are fully satisfied they go away from policy maker.

Level of satisfaction is determined by the difference between the new tariff set by the policy maker and the tariff needed for the particular agent to develop economically. Obviously, there are antagonisms between agents about the desirable tariff. For instance, farmers expect a higher tariff, while consumers, international organization, and importers expect a lower one. The gap between the existing tariffs set and the expected one conditions the direction and intensity of the move on the grid. A large negative gap makes the agent move up two cells towards the policy maker. Positive gap or equilibrium makes the agent move backwards assuming that there is no need for the agent to keep close to the policy maker in order to lobby for a higher or lower tariff.

Continued

Box 31. (continued)

Chaotic effects of limited perception in setting import tariffs

The policy maker considers, within its perception range, the agents lobbying for a new tariff. To each of these agents is associated a desired tariff and a specific weight of influence. Agents have different weights of influence. For instance, farmer representatives have a low weight, compared to the international agency or the import companies. This reflects the political economy of the rice sector in Indonesia since the 1997-1998 crisis. The policy maker computes these desired tariffs and influence weights to determine the new tariff. For instance, if the policy maker's level is 2, all agents further than two cells from the policy makers have no influence, and only the weight and desired tariff of the agents included in this two cells range are computed to define the new tariff.

In the starting configurations, farmers and consumers are far from policy makers, traders at mid-distance and importer groups and the outside international organization are close. This setting pictures how close (in terms of political influence), to the ruler, the different types of actors are in the Indonesian rice sector.

Finally, in order to represent the dynamics of the rice grower population, the model considers that farmers may disappear or develop with a specified probability according to the tariff rate. If the negotiated tariff is beyond a specified level at least five times in a row, there is a probability of 10 per cent that one farmer agent will disappear. The probability of appearance of new farmers is also set at the same level in case of a positive or favourable tariff.

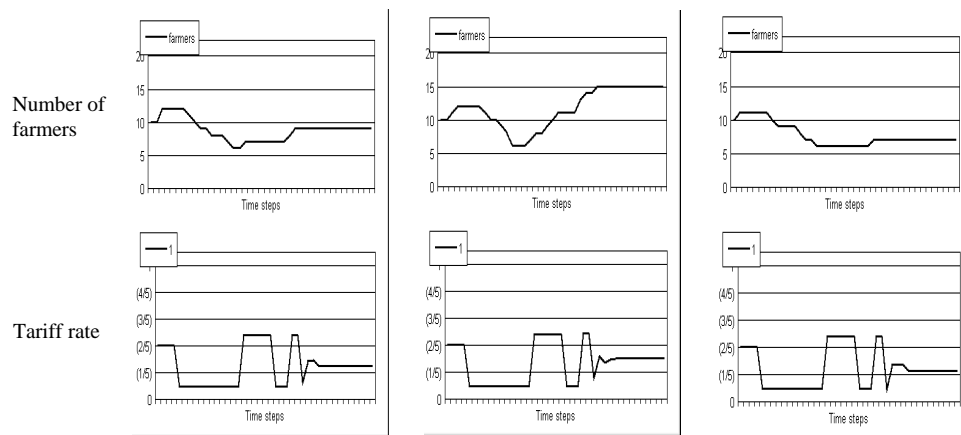
Two types of simulations have been performed with this model: one tests the influence of the perception range of the policy maker and the other tests the impact of the influence weight of farmers. Each time, simulations were made with an important number of iterations to reproduce the effect of time and see if any equilibrium could be reached.

Simulations performed with different policy makers' perception ranges gave results presented in the two first sets of graphs below. Two types of output graphs are used: one represents the evolution of the number of farmers, the second the evolution of the tariff rate. In these graphs, each indentation on the axis line marks one iteration (one cycle of message exchange and tariff establishment). The comparison between Range 2 and Range 10, with the same starting configuration, shows that the broader the perception, the faster equilibrium is reached and the more stable the final situation.

In the case of the narrowest perception range, despite an identical starting configuration, the variability introduced with the probability for farmers to disappear or develop induces final situations that can be quite different as shown in the three groups of simulation results below.

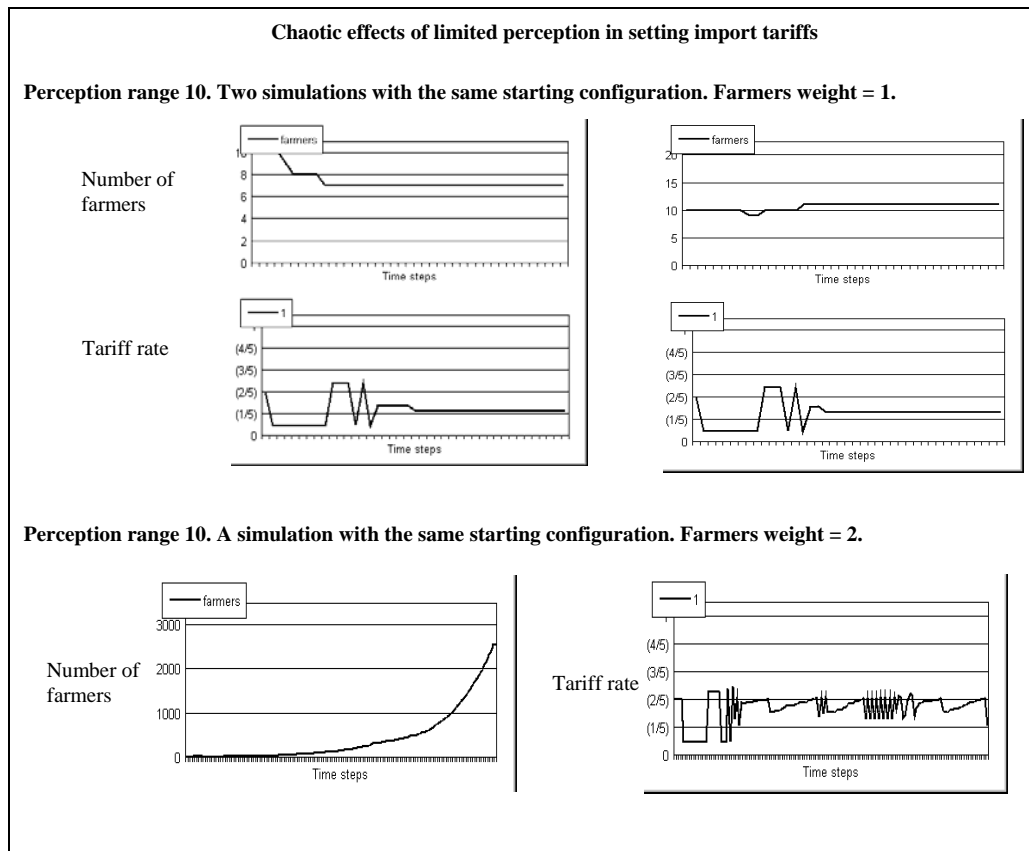
With a stronger influence weight given to farmers (2 instead of 1) and a large perception range for the policy maker, it appears that equilibrium cannot be reached. The farmer population increases more and more, while the tariff fluctuates permanently.

Perception range 2. Three simulations with the same starting configuration. Farmers weight = 1.



Continued

Box 31. (continued)



The simulation with this model helps to discuss under what conditions a stable situation can be reached in a centralized policy-making system with a conflict of interest between different stakeholders. It does not give answers to policy issues but contributes to highlight what are the factors of success or failure. In the above-mentioned case, iterations show that the same policy may have a different impact just for stochastic reasons.

Other simulations have also shown that the starting configuration affects the output, towards a more favourable situation for the agents already close to the central decision maker. This puts into question the interest and likeliness of success of ready-to-use policy precepts that are indifferently applied in countries or economic sectors showing different settings in their political economy.

In the framework of the RAINAPOL approach, MAS models have two interesting virtues. First they enable to analyze the conditions that would make stakeholders' interactions stable and satisfying regarding public decision issues. Second, they can be used as a means to discuss with stakeholders the interest and feasibility of related institutional arrangements. They can be used to generate real interactions among stakeholders about how to shape their future.

Many applications of multi-agent systems in the field of economy are possible. Of particular interest is the representation of how decisions affect the behaviour of agents in systems where interactions and communication are not exclusively economic. This is the case for systems such as commodity chains where some research has already started (Antona, 2000 and Galtier *et al.*, 2002).

The exploration of the futures and their consequences is the last step of the approach. It combines prospective approach techniques and simulation models. The former use qualitative participatory techniques and enable stakeholders to collectively reflect on what could happen in the future, while the latter uses quantitative models to help assess the consequences of specific scenarios or proposed reforms.

In both case, reflecting on the future helps stakeholders design collaborative and coordinated public decisions. Prospective analysis enables to identify the potential risks and opportunities laying before them and, from there, to derive strategies aiming at avoiding risks and at maximising opportunities. Simulation models can help stakeholders assess the feasibility of specific solutions or facilitate the evaluation of the advantages of different options for change. Both types of tools can be used to favour collective decisions among stakeholders.

Chapter VI

The RAINPOL Approach - Conclusions

The RAINPOL approach: an integrated framework for multiple stakeholder involvement in policy-making

The tools and methods presented in the previous chapters form a comprehensive approach for public decision-making developed by Cirad-amis Ecolpol within the ECOR(I) initiative: the **RAINPOL approach**. As stated in Chapter I, the aim of this approach is to enhance the success of policies by making it possible for all stakeholders to be involved in the policy definition and implementation processes, thus contributing to making policies become collaborative and coordinated public decisions.

On the whole, the approach follows a classical pattern not far from the four Intelligence/Design/Choice/Review phases of decision-making processes described by Simon (Simon, 1977). However, this pattern is applied and adapted to fit situations where multiple actors evolve in a complex environment, where individual decisions intermingle and affect the system's evolution, and where actors' participation is needed in order to reach collaborative and coordinated public decisions.

This section reviews the main steps of this approach, specifying where and how the different tools are combined and incorporated:

1. The first stage of the approach aims at **defining the objective of a policy**. It is a necessary starting point on which sufficient care should be put. As presented in Consultative definition of a policy objective, p. 16, this stage consists mainly of consultation and ad hoc interviews with a varied range of stakeholders.
2. The second stage of the approach aims at **characterizing the system** defined by the area, the issues and the stakeholders concerned by the policy objective resulting from the first stage. This characterization consists of collecting information, and building a comprehensive representation of the system and presenting and discussing these representations.

In this characterization stage, two phases are to be carried out:

- a) The first phase consists of **stakeholder identification**. As presented in Identifying stakeholders for policy-making, p. 19, stakeholder identification combines the consultation of various stakeholders (p. 19), the organization of different forms of expert meetings (the PRACTYP method (p. 22) and the characterization of commodity chain actors (p. 25)) and the use of the institutional surveys (p. 20). Thus, it combines tools from the CADIAC approach and from the PACT institutional analysis method.
- b) The second phase aims at **identifying and characterizing what is at stake in the system**. As presented in Identifying what is at stake, p. 34, two main types of stakes are to be identified: those related to technical and economic issues and those related to sociological and institutional issues.

Identifying, characterizing and representing technical and economic stakes is achieved by combining secondary sources of information and surveys of various actors (Generating and revealing information ..., p. 39) and analyzing them with farming systems and commodity chain concepts. In doing this, comparative

classification (Comparative classification, p. 39) and case comparisons (p. 43) are combined with commodity chain analysis tools from the CADIAC approach (p. 45).

Identifying, characterizing and representing socio-institutional stakes are achieved with institutional surveys (Box 9, p. 38), institutional analysis and institutional synthesis methods (p. 53). These techniques are derived from the PACT institutional analysis method.

3. The objective of the third stage is to **build scenarios** and elaborate **simulations to explore what the future of the system can be**, to be able then to analyze what consequences these different possible futures may have. The first identification of key variables and their possible evolutions, enables to define scenarios with which contrasting system evolutions can be simulated. These simulations locate actors with regard to stakes at different time horizons, and show how stakes evolve and change, and how actors may act or react facing these changes.

Scenarios of evolution are defined with the help of prospective study methods (p. 93).

The use of the MATA model (p. 106), commodity chain models from the CADIAC approach (p. 109) and Multi-Agent System models (p. 111) enables, for each scenario, the evaluation of the possible final situations of the system, using performance indicators derived from the previous stage. This combination of tools helps visualize various options and their consequences with regard to stakes and to expectations of actors and decision makers. Performance indicators allow more specific assessment of gains and losses as they relate to economic, social and institutional aspects of the system as well as to the use of natural resources, by type of actors and for the whole system.

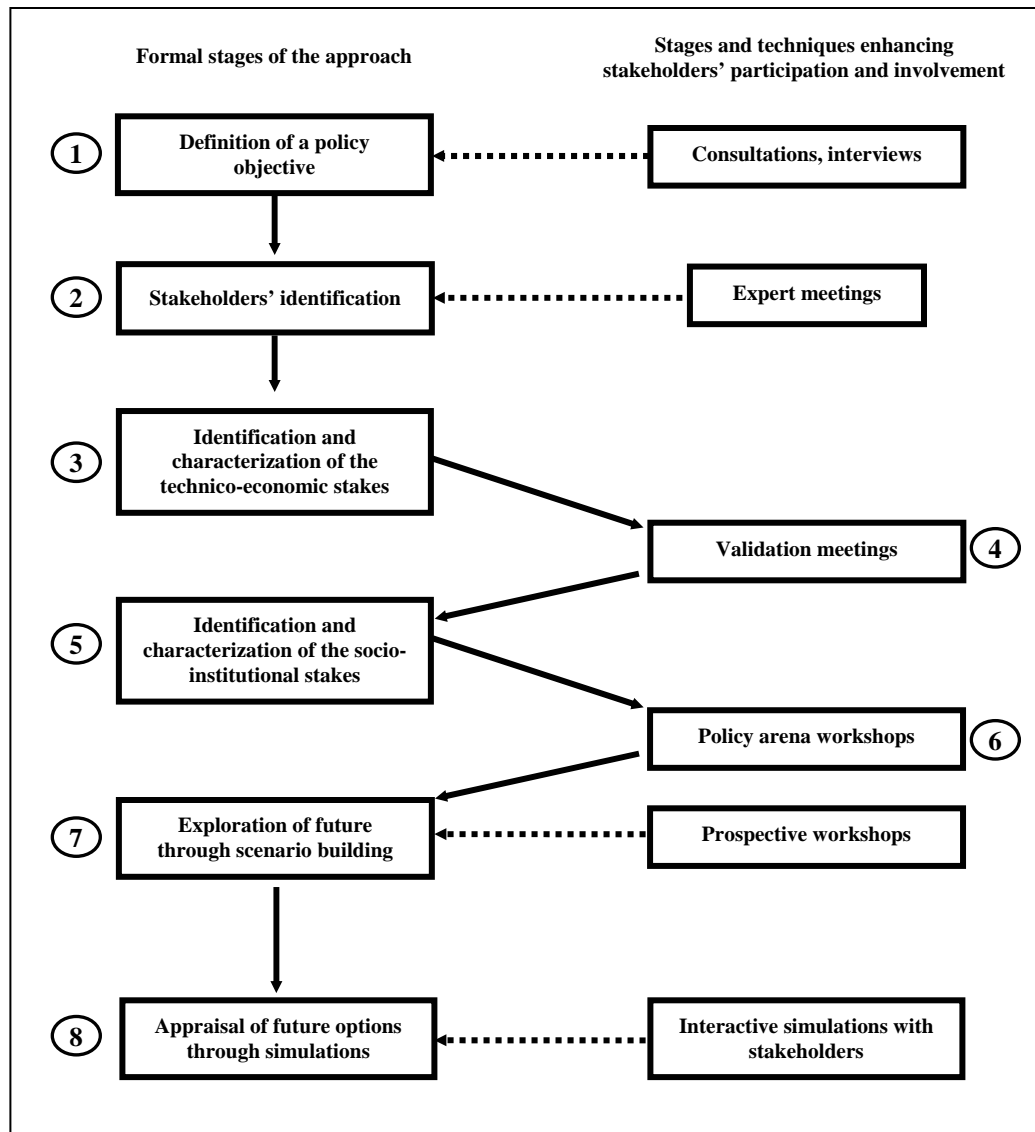
The RAINAPOL approach does not limit itself to these three stages, focused on identification, characterization and appraisal. It combines them with specific tools and phases designed to ensure the proper participation and involvement of stakeholders in the policy definition and implementation processes:

1. The **consultations and interviews of the policy objective definition stage** are essential to the whole process. They ensure that the topic to be tackled is important and considered as thus by stakeholders.
2. The **expert meeting techniques used for stakeholders' identification** provide more than just information, they involve stakeholders in the information generation process and help its sharing and broadcasting.
3. **Validation meetings** can be considered themselves as a specific phase within the approach. They take place just after the technico-economic stakes identification stage and enable to validate, share and broadcast important information with stakeholders.
4. **Policy arena workshops** can also be considered as a specific phase within the approach. They take place just after the socio-institutional stakes identification stage and allow stakeholders to collectively design processes of change.
5. The **prospective workshops** are an integral part of the future exploration stage of the approach since prospective analysis is solely carried out through these workshops. They enable to build a common vision of what is at stake in the future and to derive collective decisions on what decision should be taken and how.
6. Models constructed within the future exploration stage of the approach can be successfully used as a means to foster discussions among stakeholders on the feasibility and efficiency of options of change. **Interactive simulations implemented**

with stakeholders can help stakeholders make improved and precise collaborative and coordinated public decisions.

The RAINAPOL approach is, in fact, the intimate combination of formal stages with participatory phases as summarized in Figure 18.

Figure 18. The various phases of the RAINAPOL Approach



The RAINAPOL approach: bridging stakeholders' views for collective action

Public decisions always concern a large range of stakeholders: State organizations, local authorities, formal and informal institutions, individuals. Through their actions, they can all affect the outcome of a given reform or policy. And, unfortunately, these actions may not all go in the same direction. They often happen to ignore or even oppose each other.

The approach presented in this book proposes a range of tools, methods and activities to make the public decision process more successful and more efficient. Used properly, it can help identify problems that really need to be tackled, it can foster the involvement of the different stakeholders, it can identify important stakeholders and important stakes and it can help define courses of actions that have a strong potential of success. But one of the main interests of the method is that it provides means to build synergies between the different types actors and their decision levels.

For synergies to work out, actors have to accept working together, which is a difficult task in itself. An important part of the difficulty lies in the fact that the bounded perceptions all actors have of reality generate misinterpretations, which can easily lead to misunderstandings, diverging opinions or even conflicts. Building synergies and having them work thus entails (1) widening and completing actors' bounded views and information and (2) bridging the different or diverging views of a situation.

In the previous chapters, various methods and tools have been presented that can help broaden the perceptions actors have of the situation and its stakes. They involve generating information, sharing it and broadcasting it.

Methods and tools aimed at bridging the diverging views of stakeholders are also included in the approach. They are of three types. The first one is based on sharing technical and economic information, the second on analyzing actors' perceptions and the third on reflecting on future possible evolutions. Their importance to facilitate the collective design of public decisions requires that sufficient attention be paid to their use.

Sharing technical and socio-economic information can serve as a first pillar to bridge actors' views. Sharing this information through expert meetings, validation meetings or other media creates a common ground of knowledge and awareness. This common ground is made of words, concepts and diagnosis shared by all. They can ease discussions among stakeholders since all become aware of and understand what the others are speaking about on the matter.

Caution is necessary in some situations. If strong uncertainties exist on the technical and socio-economic aspects, or if actors are arguing regarding the interpretation of these aspects, their use as a means to bridge views can be counter-effective.

However, in many cases, technical and socio-economic information is seen as rather neutral by most actors. They perceive it as an objective description of what reality is made of. Due to this quality, it can be used at the beginning of the process in order to bring actors together for the first time.

Results from the analysis of institutional interviews provide a second pillar on which to bridge actors' differing points of view. Qualities identified by the analysts, because of their inner positive values, have the ability to facilitate dialogue and collective actions, especially for the qualities all actors consider improvement is needed. Through the identification of consensus among actors' positions, the identification of collaboration opportunities and the identification of key actors for a positive process of change, the PACT method provides the basis on which conciliation can be built. It thus offers analysts and mediators means to help stakeholders work together.

The PACT method has its own limits though. It has been conceived to unveil consensus among actors' perceptions or opportunities for collaboration when they exist. And sometimes such opportunities are not there. Conflicts may be too deeply rooted in objective causes. In such cases, the PACT method will help assess that it is so. However, then, the collective design of a public decision might not be feasible.

Real situations are not often that critical, and the use of PACT, along with the associated policy arena workshop, can strongly contribute to helping stakeholders build collaborative and coordinated actions (Chapter IV). It complements well the sharing of "objective" technical and socio-economic information undertaken previously. The latter provides a first common ground shared by actors and elements determining the feasibility of solutions that can help the subsequent phase of designing solutions during policy arena workshops. This second way of bridging actors' points of view is a step further in building common ground, concepts and visions among stakeholders, and, sometimes, it can directly lead to collective decisions and action plans.

The third way proposed in the RAINAPOL approach to overcome diverging opinions and enable the co-construction of public decisions, is based on the identification of future stakes. It has been shown that, while trying to solve today's problems easily leads to quarrels between opposing views, agreement is more easy to obtain when reflecting on the consequences of what could happen in the future (Weber, 1996).

As illustrated in Chapter V: Building scenarios to ..., p. 93, it is possible to have stakeholders' collectively identify risks and opportunities laying in the different possible futures. From there, it is easier to derive a collective collaborative strategy in order to avoid important risks and favour beneficial opportunities. Gradually, stakeholders can thus be led to discuss and design actions for today in order to prepare for tomorrow.

It is worth mentioning that, in the example used in this book to illustrate the whole process, the fact that stakeholders finally achieved to work and design actions together after a prospective workshop does not mean that the previous phases were useless. A prospective workshop is based on the perceptions actors have of their system and its functioning. If these perceptions are too limited or erroneous, the source of information to identify the key variables, the subsequent scenarios and their consequences may not be accurate or relevant enough. The quality of the final results depends on the quality of actors' perceptions as much as it depends on the possibility to have them work together.

The previous phases of the approach ensure that, prospective workshops start with a good basis. Stakeholders have been provided with information that made them more aware of the real stakes in their system. Activities such as validation meetings and policy arena workshops have led actors to realize that they can discuss and work together.

The RAINAPOL approach: potentials, limits and beyond

The description of the different steps of the RAINAPOL approach and how they help stakeholders build public decisions and implement them highlight the rationales behind the design of the approach. The design of the approach (1) allows a comprehensive and gradual understanding of a situation or a given problem, (2) enables the gradual involvement of the different stakeholders, and (3) gradually makes possible for stakeholders to work together and achieve collaborative and coordinated public decisions.

Although the examples used in this book as illustrations all deal with agricultural policy issues, potential applications extend beyond this domain. The capacity of the approach to facilitate the emergence and operation of conciliation or coordination processes makes it promising for all situations where having stakeholders work together is at stake. Provided the

technical aspects of stake identification are adapted, most phases could be used for policies outside the agricultural sector, for topics related with natural resource management, common property management, for development project design and management or even for international agreement negotiations.

In spite of the possibilities of the approach for problems where public decision and multiple actors' interactions are at stake, efforts are still needed. This is particularly true for the implementation phases. The difficulties faced by stakeholders in an implementation process are real and often underestimated. This book provides clues to overcome some of these difficulties. But further efforts are needed to design concepts, tools and methods to (1) ensure proper representation and involvement of types of stakeholders regrouping a multitude of scattered individuals, (2) strengthen stakeholders' commitment to agreed upon decisions, (3) help actors build and operate monitoring entities to support emerging decisions, and (4) train individuals to mediate new forms of public decisions, etc.

This list is not exhaustive, but it pinpoints the importance of "practical" science in the field of public decision. The construction of concepts and methods aimed at better understanding situations and evolutions is necessary. However, designing clear reproducible methods to guide societies through the implementation of better public decisions are also essential. As stated in the first chapter of this book, the challenge might not be to decide whether markets, State or other forms of institutions are better but rather to design ways to combine and coordinate their mutual advantages for the best. In short, it might be time to advocate for the development and use of a "science of action".

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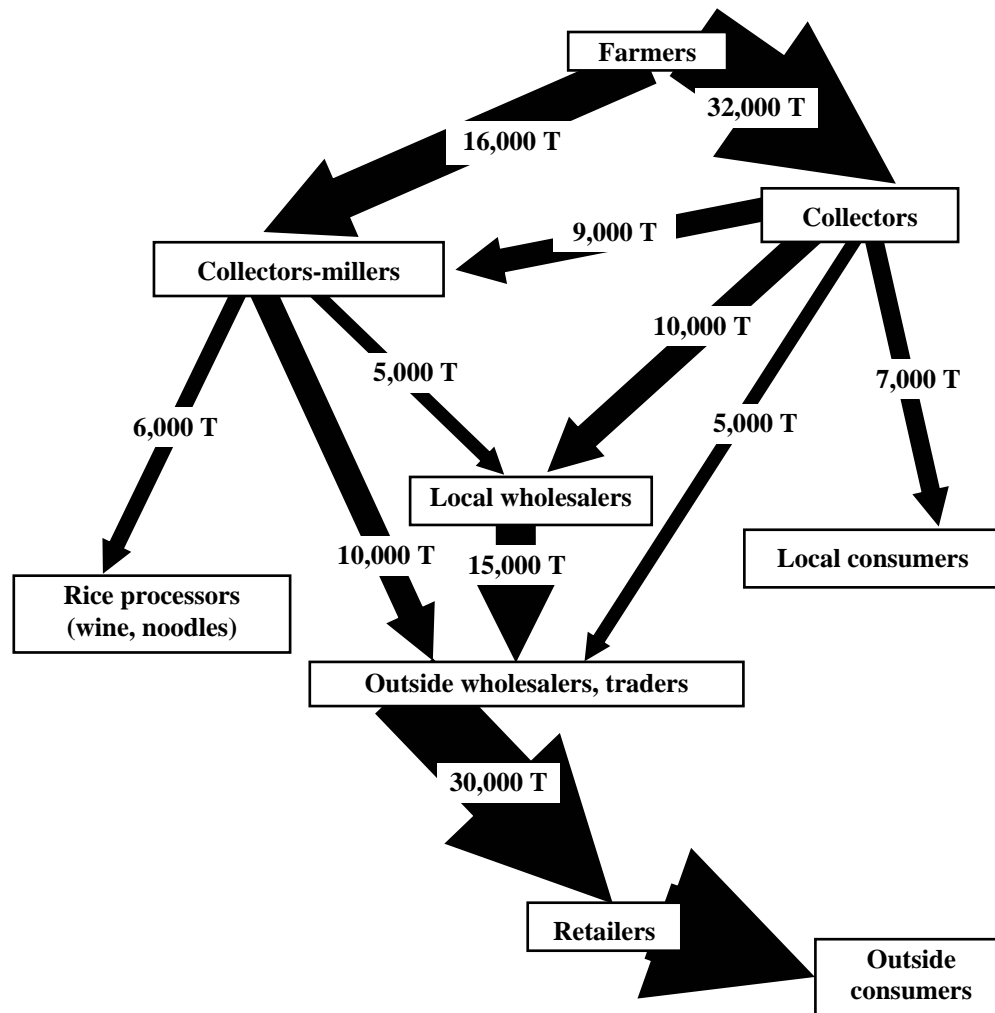
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Appendices

Figure 19. The rice commodity chain in Phu Xuyen district (Ha Tay province)

**Remarks:**

All quantities are expressed in tons of equivalent paddy.

Collectors and farmers use the services of small millers to husk their paddy.

Paddy is sold by farmers to collectors and collectors-millers.

All other actors sell husked rice (collectors partially mill it, wholesalers and traders mill it further and polish it).

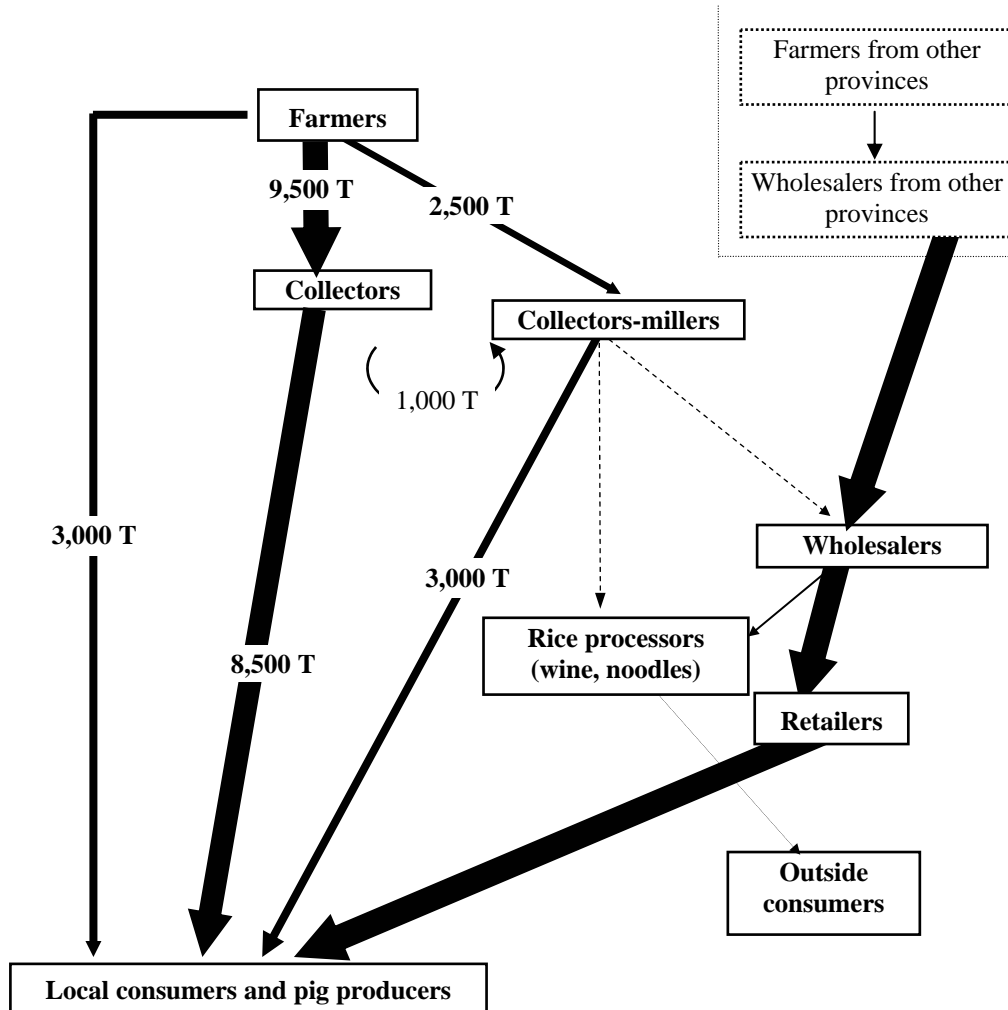
Distribution of paddy production

Total paddy production	120,000
Human auto-consumption	40,000
Used as animal feeds	30,000
<i>Sold by farmers</i>	<i>50,000</i>
Sold outside the province	30,000
Used in food processing	10,000

Employment provided by each activity

Total number of households	40,000
... involved in producing paddy	38,000
... involved in selling paddy	23,000
... involved in paddy collecting	1,500
... involved in rice wholesaling	50
... involved in rice processing	400

Figure 20. The rice commodity chain in Hoai Duc district (Ha Tay Province)



Remarks:

All quantities are expressed in tons of equivalent paddy.
 Collectors and farmers use the services of small millers to husk their paddy.
 Paddy is sold by farmers to collectors and collectors-millers. All other actors sell husked rice.
 Quantities coming from other provinces are not estimated.

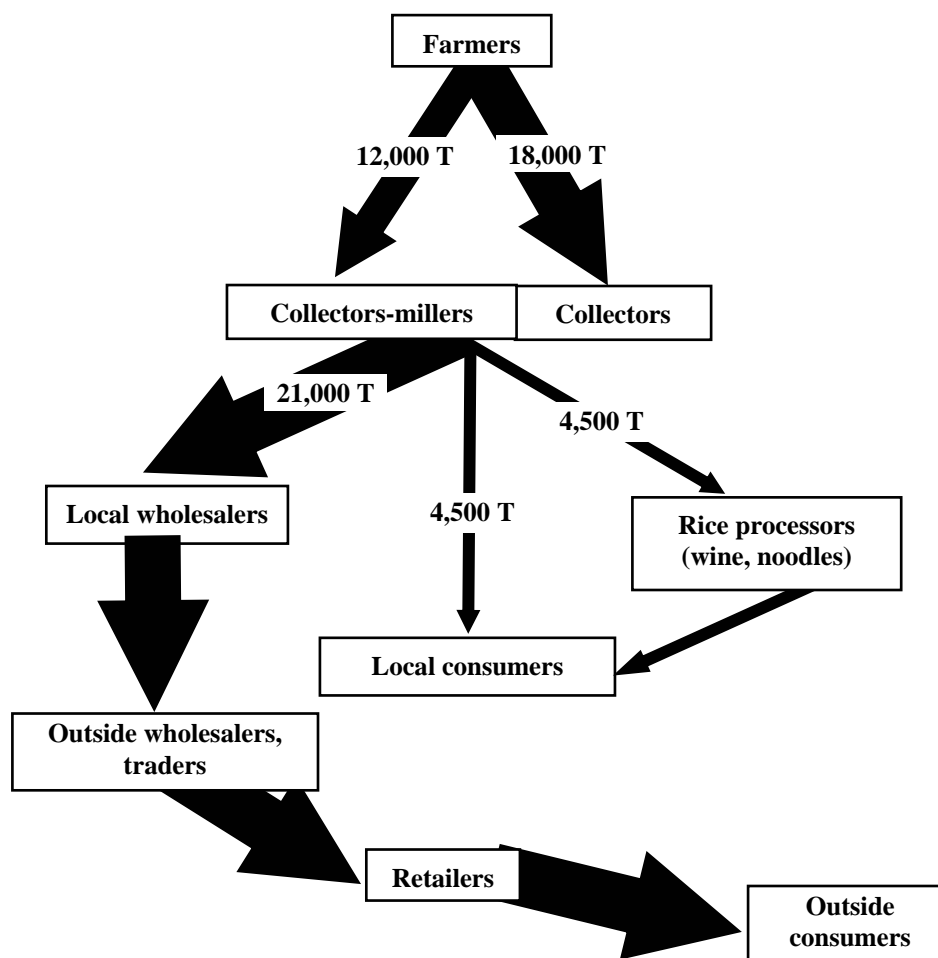
Distribution of paddy production

Total paddy production	46,000
Human auto-consumption	24,500
Used as animal feeds	6,100
<i>Sold by farmers</i>	<i>15,000</i>
Sold outside the province	0
Used in food processing	3,300

Employment provided by each activity

Total number of households	40,000
... involved in producing paddy	38,000
... involved in selling paddy	20,000
... involved in paddy collecting	400
... involved in rice processing	150

Figure 21. The rice commodity chain in Vu Ban district (Nam Dinh Province)

**Remarks:**

All quantities are expressed in tons of equivalent paddy.

Collectors and farmers use the services of small millers to husk their paddy.

Paddy is sold by farmers to collectors and collectors-millers.

All other actors sell husked rice (collectors partially mill it, wholesalers and traders mill it further and polish it).

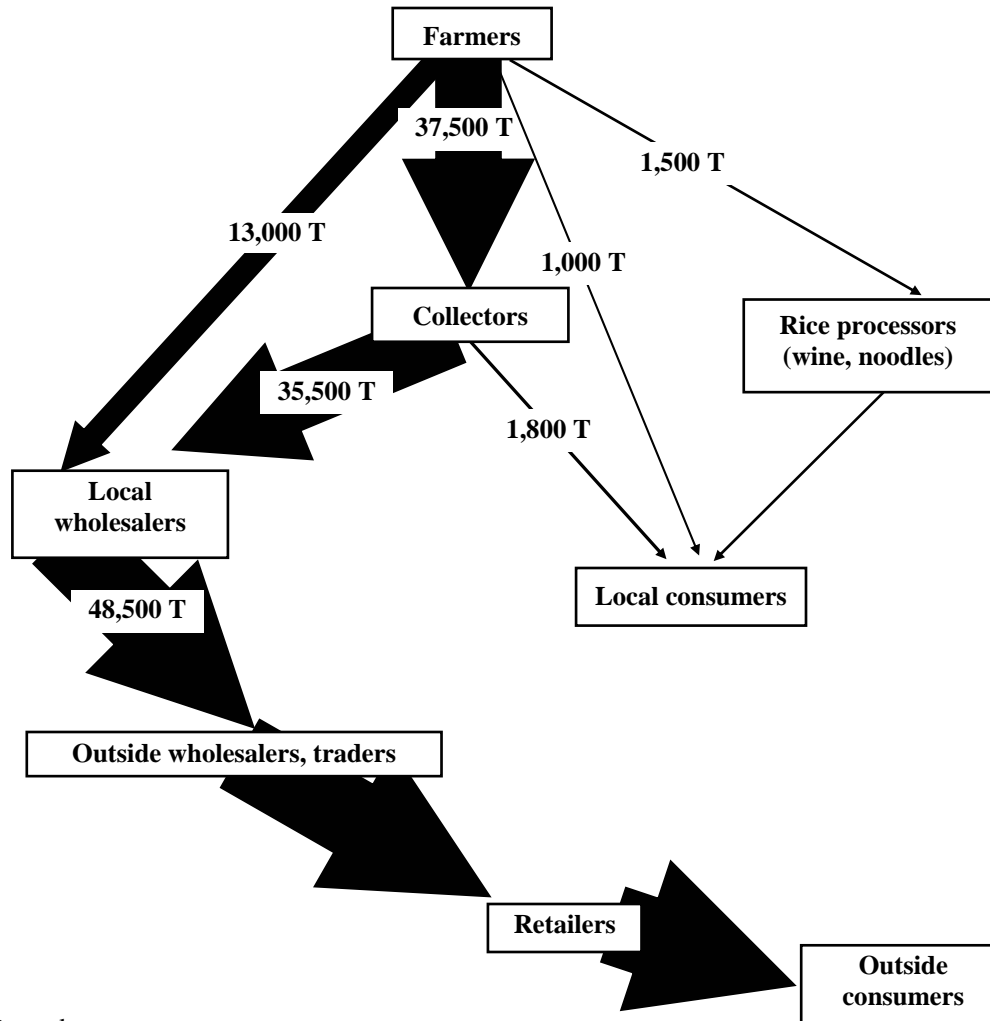
Distribution of paddy production

Total paddy production	90,000
Human auto-consumption	35,000
Used as animal feeds	25,000
<i>Sold by farmers</i>	<i>30,000</i>
Sold outside the province	21,000
Used in food processing	4,500

Employment provided by each activity

Total number of households	28,000
... involved in producing paddy	27,000
... involved in selling paddy	16,000
... involved in paddy collecting	750
... involved in rice wholesaling	50
... involved in rice processing	200

Figure 22. The rice commodity chain in Hai Hau district (Nam Dinh Province)



Remarks:

All quantities are expressed in tons of equivalent paddy.
 Collectors and farmers use the services of small millers to husk their paddy.
 Paddy is sold by farmers to collectors and collectors-millers.
 All other actors sell husked rice (collectors partially mill it, wholesalers and traders mill it further and polish it).

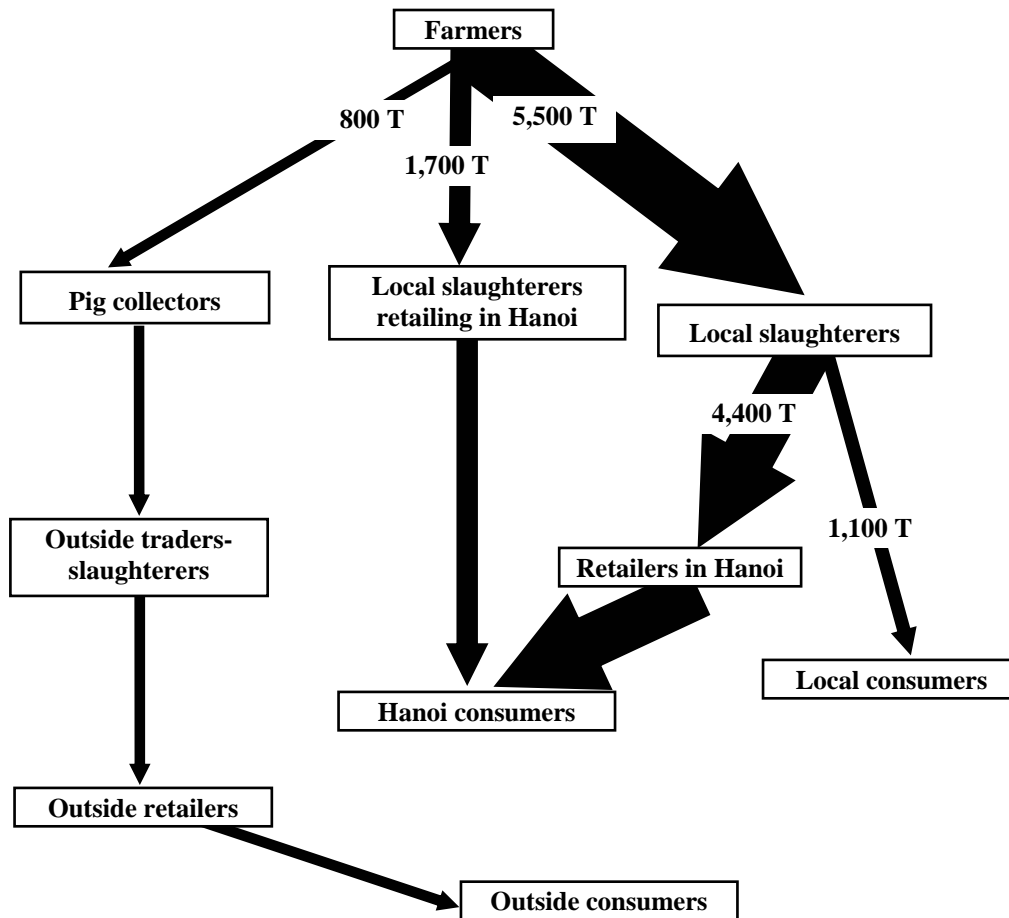
Distribution of paddy production

Total paddy production	155,000
Human auto-consumption	38,000
Used as animal feeds	65,000
<i>Sold by farmers</i>	<i>52,000</i>
Sold outside the province	48,500
Used in food processing	1,500

Employment provided by each activity

Total number of households	81,000
... involved in producing paddy	77,000
... involved in selling paddy	46,000
... involved in paddy collecting	1,500
... involved in rice wholesaling	50-100
... involved in rice processing	50

Figure 23. The pig commodity chain in Phu Xuyen district (Ha Tay province)

**Remarks:**

All quantities are expressed in tons of equivalent live pig.

Collectors, slaughterers and outside traders-slaughterers only buy live pigs.

All retailers buy carcass pieces and sell fresh carved meat.

Consumers buy fresh carved meat.

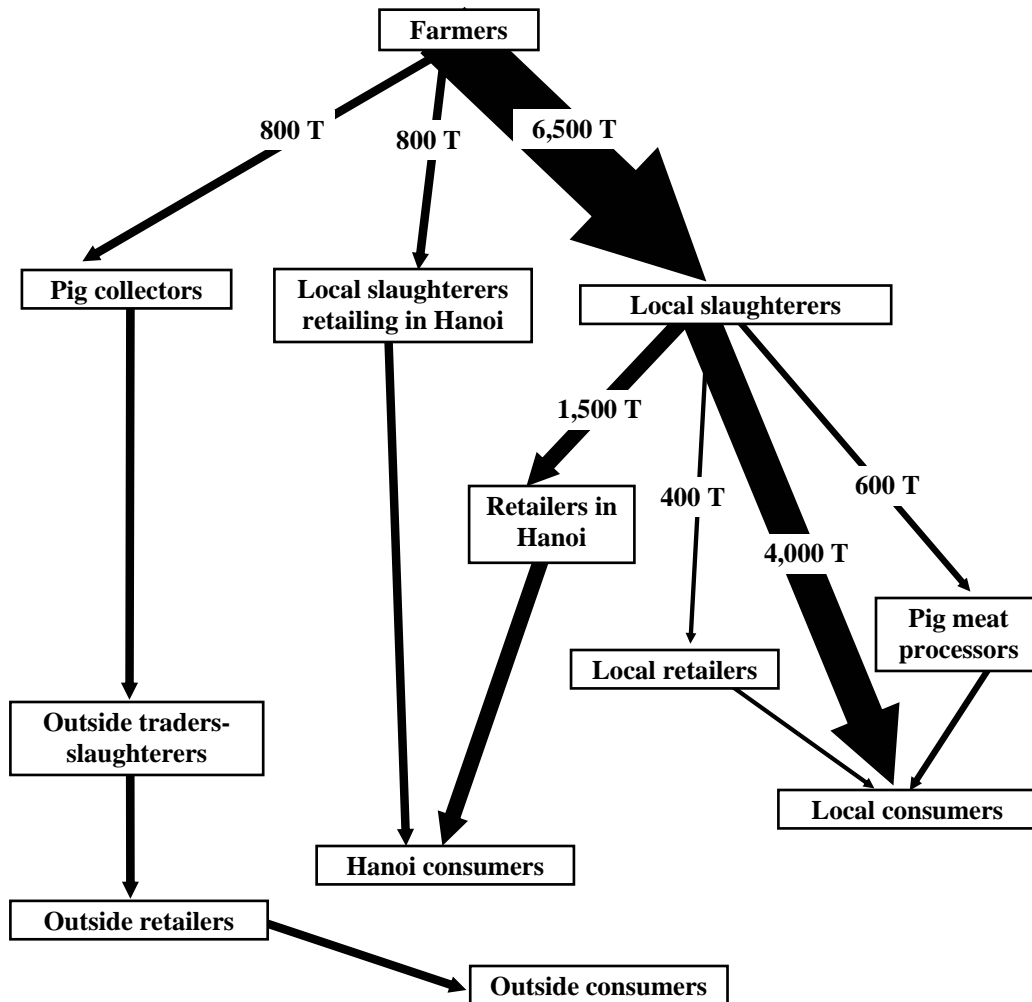
Distribution of pig production

Total pig production	8,000
Sold by farmers	8,000
Sold outside the province	6,900
Processed	0
Consumed locally	1,100

Employment provided by each activity

Total number of households	40,000
... involved in producing pig	34,000
... working as local slaughterers	400
... working as meat processors	0
... working as retailers	300
... working as pig collectors	20

Figure 24. The pig commodity chain in Hoai Duc district (Ha Tay province)



Remarks:

All quantities are expressed in tons of equivalent live pig.
 Collectors, slaughterers and outside traders-slaughterers only buy live pigs.
 All retailers buy carcass pieces and sell fresh carved meat.
 Consumers buy fresh carved meat.

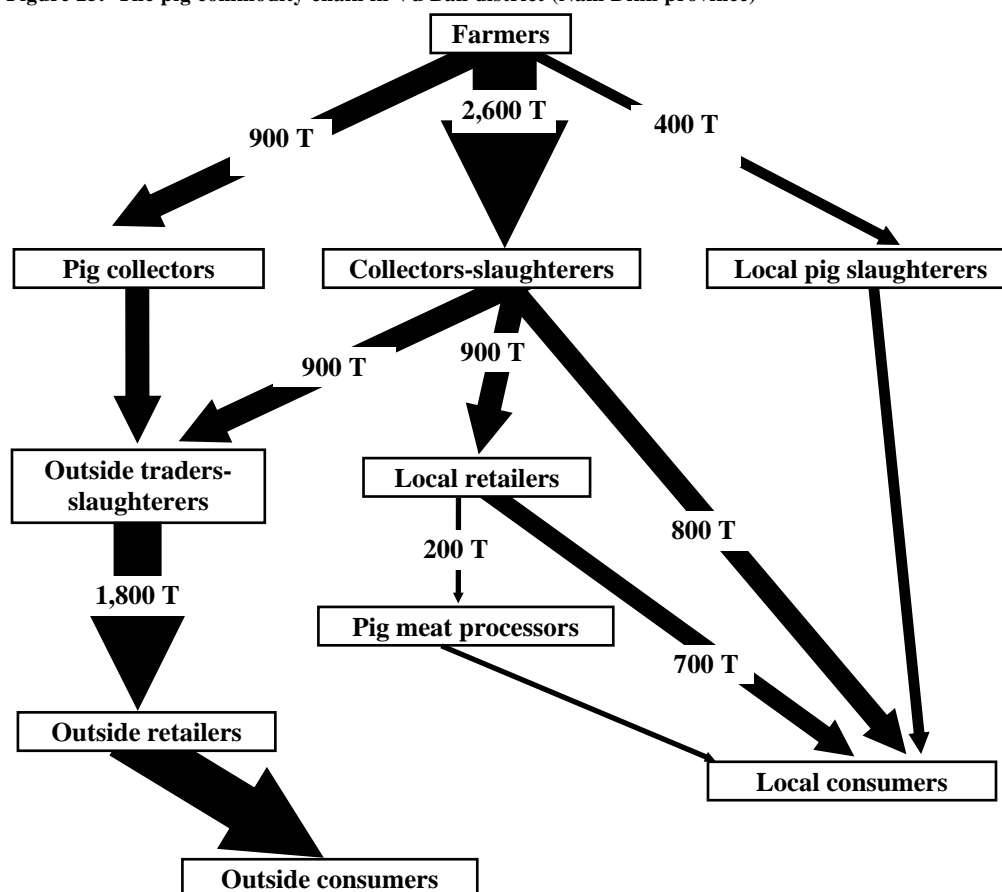
Distribution of pig production

Total pig production	8,000
Sold by farmers	8,000
Sold outside the province	3,100
Processed	600
Consumed locally	4,400

Employment provided by each activity

Total number of households	40,000
... involved in producing pig	34,000
... working as local slaughterers	400
... working as meat processors	60
... working as retailers	200
... working as pig collectors	20

Figure 25. The pig commodity chain in Vu Ban district (Nam Dinh province)

**Remarks:**

All quantities are expressed in tons of equivalent live pig.

Farmers raising 2-4 pigs per year sell to both types of local slaughterers. Farmers raising 10 pigs or more sell to both types of collectors.

Collectors-slaughterers trading with outside traders-slaughterers, farmers and collectors sell live pigs.

All retailers buy carcass pieces and sell fresh carved meat. Local slaughterers sell fresh carved meat.

Meat processors only buy specific meat pieces and sell locally processed meat (processed ham, etc.).

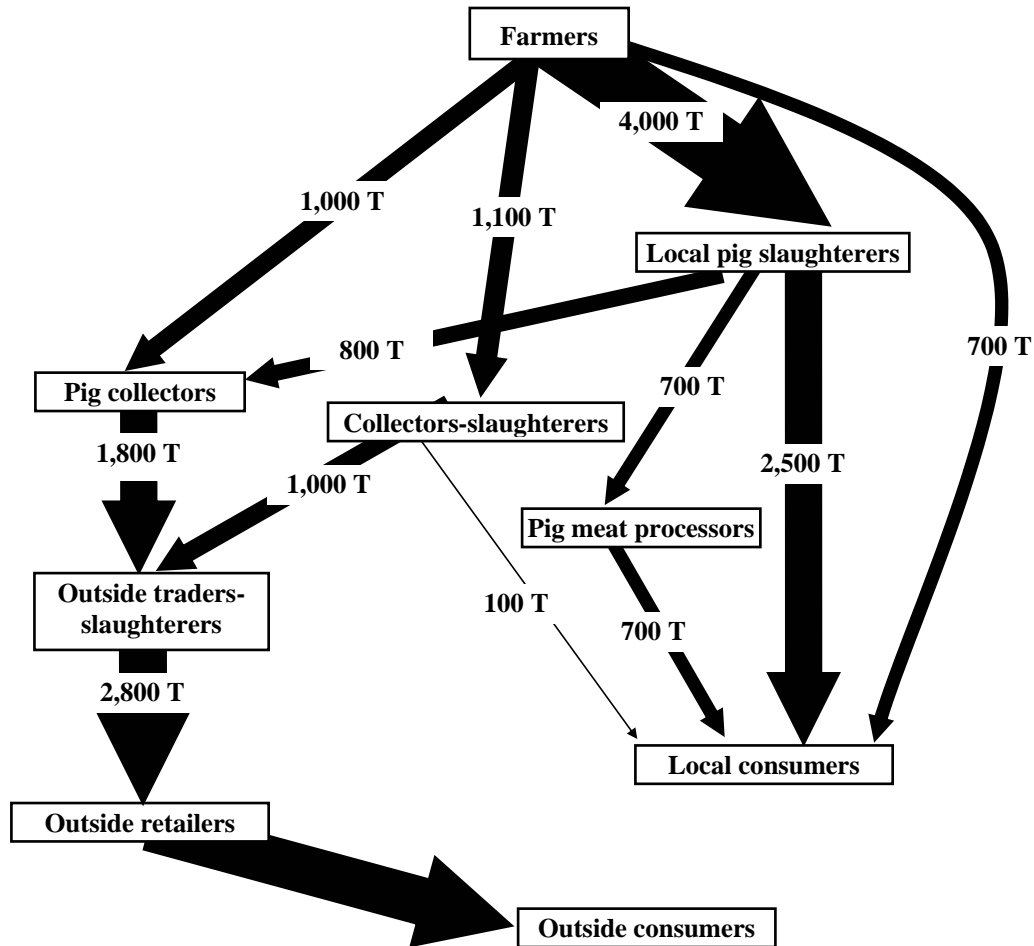
Distribution of pig production

Total pig production	3,900
Sold by farmers	3,900
Sold outside the province	1,800
Processed	200
Consumed locally	1,900

Employment provided by each activity

Total number of households	28,000
... involved in producing pig	24,000
... working as local slaughterers	200
... working as meat processors	20
... working as retailers	60
... working as pig collectors	20

Figure 26. The pig commodity chain in Hai Hau district (Nam Dinh province)



Remarks:

All quantities are expressed in tons of equivalent live pig.

Collectors, slaughterers and outside traders-slaughterers only buy live pigs.

Consumers buy fresh carved meat.

Meat processors only buy specific meat pieces and sell locally processed meat (processed ham, etc.).

Distribution of pig production

Total pig production	49,000
Sold by farmers	49,000
Sold outside the province	20,400
Processed	5,000
Consumed locally	23,600

Employment provided by each activity

Total number of households	81,000
... involved in producing pig	73,000
... working as local slaughterers	2,000
... working as meat processors	500
... working as retailers	0
... working as pig collectors	200