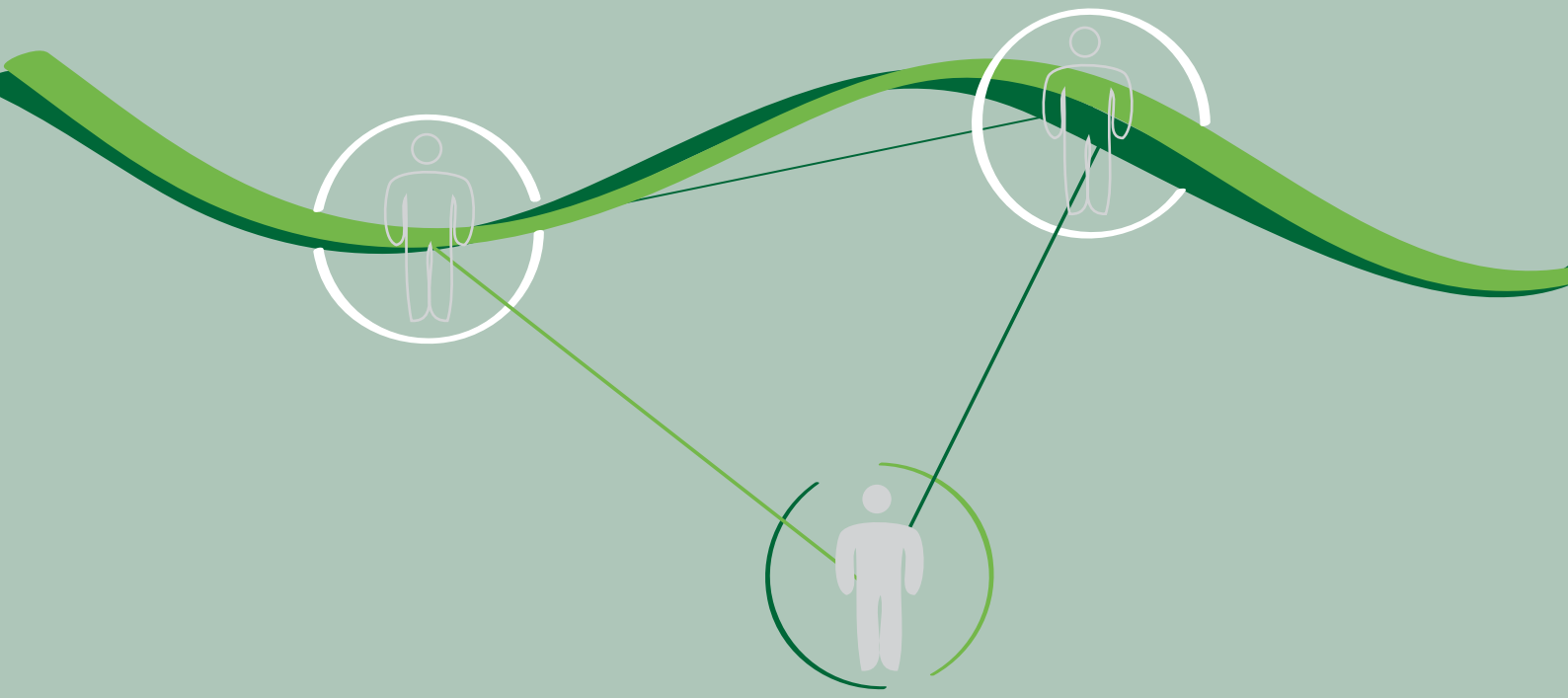
Strengthening partnerships and networks in agricultural research for development

a learning module

(Version 1.0)



ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Strengthening partnerships and networks in agricultural research for development

A learning module (Version 1.0)

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Preface

The nature and complexity of agricultural development challenges the world is facing are constantly changing. The agricultural research systems, the world over, have been transforming and adopting new paradigms in response to such changes. It is acknowledged that the research system alone cannot tackle these complex challenges. They hold only one piece of the puzzle!

These developments demand that contemporary thinking of agricultural development look beyond production into the chain of activities and interventions required up to consumption. This calls for the involvement of all relevant actors, individuals and organizations in the process. In turn this requires a different framework and institutional arrangement to conduct research for development. To be effective, emerging concepts such as Innovation Systems Perspective (ISP), value chain analysis, Integrated Agricultural Research for Development (AR4D) and impact orientation need to be integrated into the agricultural research process. The R4D system should think in terms of contributing to innovation and not just generating knowledge.

In such a scenario, capacity and skills of researchers to work with a diverse set of partners at various levels becomes critical. It becomes necessary to create the capacity to design and manage partnerships in agricultural research for development. This learning module has been prepared to serve as a tool in achieving the objective of strengthening the capacity of researchers and other actors who are believed to have a key role to play in leading agricultural R4D initiatives. This includes national, regional, international and private sector agricultural researchers and development practitioners.

Partnerships have been and are a cornerstone of ILRI's implementation framework. ILRI has a partnership strategy to guide the implementation of ILRI's activities. This module complements this strategy in terms of preparing our collaborating partners to effectively participate and contribute to multidisciplinary, multistakeholder interventions.

This module is expected to have multiple uses. One, as a source material for trainings that could be organized at different levels, and two, as reference document to upgrade the knowledge of staff of partner organizations about partnership design and management in R4D projects. The design of the learning module includes guidance notes for potential trainers including learning purpose and objectives for each session; description of the session structure (including methods, techniques, time allocation to each activity); power point presentations, presentation text, exercise handouts, worksheets, and additional reading material. There are also evaluation forms and recommended bibliography for use by future facilitators.

The module has been prepared in the style of a source book and it assumes that the reader is familiar with the concepts, procedures and tools used in participatory research approaches. Users can pick and choose the sessions/ideas/tools/concepts that are most relevant and appropriate in specific contexts and for specific purposes. This is work in progress. The module is being continually refined and updated, based on application of the concept and tools in ILRI and elsewhere and, lessons learned in the process. ILRI would like to encourage users of this learning module to actively provide feedback, including suggestions on how it can be improved.

Bruce Scott
Director, Partnerships and Communication
ILRI

Acknowledgements

This learning module was prepared to complement the previous learning module on applying innovation systems concept in agricultural research for development. A critical factor for successful innovation systems is the new and innovative partnership between public sector, private sector, NGOs, and community-based organizations.

During the evaluation session of the training workshop on the integration of ISP in agricultural research for development, participants highlighted the need for a module on design, implementation and evaluation of partnerships and networks. In addition, a number of livestock training needs assessment studies commissioned by ILRI also identified the need for such training. Thus the module is a response to the expressed demand.

We wish to express our gratitude to Dr Carlos Seré, Director General of ILRI; Dr John McDermott, Deputy Director General of ILRI; and Mr Bruce Scott, Director of Partnership and Communication for their continued support and interest shown in the development of this module. Our earlier work with the Improving Productivity and Market Success (IPMS) project also to some extent contributed to the development of these materials. The input of Dirk Hoekstra, the project manager, is also very much appreciated.

This material was presented in a learning workshop on 'Strengthening partnerships and networks in agricultural research for development', jointly organized by International Rice Research Institute (IRRI), Indian Council of Agricultural Research (ICAR), ILRI on 22–24 September 2009 at ICRISAT in Hyderabad. The module was then revised based on the feedback from the participants. The authors would like to appreciate the contribution of the participants. We also would like to thank Dr Thelma Paris of IRRI for giving us the opportunity to test and validate the draft materials. The contribution made by Ms Menbere Mariam Seyoum and Mr Apollo Habtamu in designing the cover and the typing assistance provided by Mrs Samrawit Eshetu and Mrs Tigist Endashaw are also kindly acknowledged.

As this is a work in progress, we would appreciate any constructive comments from the users that could enable us to continue to revise the module, to make it more user-friendly and relevant. So users' contributions are gratefully acknowledged in advance.

Authors

Learning approach

This learning module provides trainers with the information, specific activities and materials they need to effectively plan and deliver a learning program on 'Partnerships and networks in agricultural research for development'.

The learning module is organized to foster participatory learning and hence takes into consideration the principles of adult and experiential learning. As a result, all sessions are planned to include a short presentation by the trainer not exceeding 30 to 45 minutes followed by an exercise session to help participants relate the presentation (the new knowledge) with what they already know and reflect on possible opportunities and challenges for its application. In doing so, the module encourages participation and provides hands-on, problem-solving experiences and exercises.

The whole module is divided into ten sessions and, including a field visit. Each session is self-contained but logically flows from the preceding session. Therefore, at the outset of each session, the trainer should try to highlight the link between the current, previous and following sessions.

The module also has an evaluation session to be held at the end of the workshop to get feedback from participants that would help in refining the module.

How to prepare for a session

Before starting the session the trainer should read the facilitators guide of each session and make sure that the materials and handouts required for running the session are in place.

Furthermore, it is required to ensure that all training materials listed in the trainer's guide are available, the training hall is well organized and has enough space for the plenary and group sessions.

Target users

This module is aimed primarily at national, regional, international and private sector agricultural researchers, research managers and development practitioners who are concerned and working towards enhancing efficiency that impact agricultural research for development.

Workshop on partnerships and networks in agricultural research for development—Tentative schedule

Day one	Day two	Day three	Day four	Day five
08:30–09:00 Registration	08:30–09:30 Session 5	8:30–9:30 Session 8	Field work	08:30—10:30 Presentation of field report
09:00–10:30 Session 1	Partnership design : Key steps and tools	Key skills for effective partnership management—Conflict management, negotiation and facilitation		
Welcome	Presentation			
Official opening	09:30–10:30 Exercise 5	09:30–10:30 Exercise 8		
Introduction to the workshop				
Introduction of participants				
10:30–10:45 Health break				
11:30–12:30	10:30–11:30 Exercise 5 (cont'd)	10:45–12:00 Exercise 8 (cont'd)	Field work	10:45–11:30
Session 2	11:30–12:15 Session 6	12 :00–13:00 Session 9		Session 10
Changing R&D paradigms	Partnership implementation and tools.	Monitoring, evaluation and impact assessment of partnerships		Issues, challenges and best practices
Presentation	Presentation			Presentation
12:30–13:00 Exercise 2	12:15–13:00 Exercises 6	Presentation		
				11:30–13:00 Exercise 9
13:00–14:00 Lunch break				
14:00–14:45 Session 2 Exercise 2(cont'd)	14:00–14:30 Exercise 6 (cont'd)	14: 00–15:30 Exercise 9	Field report preparation	14:00–15:00 Exercise 10 (cont'd) 15:00–16:00
14:45–15:30 Session 3	14:30–15:30 Session 7			workshop evaluation
Why Partnerships in agricultural research for development	Key skills for effective partnership management—Interpersonal relations, feedback and communication			16:00–17:00
Presentation and Plenary Discussion	Presentation			Graduation ceremony and closure
15:30–15:45 Health break				
15:45–17:00 Session 4	15:45–17:00 Exercise 7	15:45–16:30 Exercise 9 (cont'd)	Field report preparation	
Partnership typology and key research partnerships		16:30–17:00 Preparation for field work		
Presentation and plenary discussion	17:00–17:15 Feedback on the day's activity	17: 00–17:15 Feedback on the day's activity		
17:00–17:15 Feedback on the day's activity				

Training workshop evaluation form

Strengthening partnerships and networks in agricultural research for development

Your co-operation in completing this questionnaire will be greatly appreciated. The information you provide will be useful in planning future events and will help resource persons to improve their materials and presentation.

A. General assessment	In general, I would rate the workshop as: Excellent Very Good Good Poor Very Poor

B. How would you rate this workshop in meeting your expectations?

☐ Partially ☐ Fully ☐ Exceeded

Please explain (if the workshop did not fully meet your expectations only)

_____

_____

_____

_____

_____

C1. Were the training objectives clear?

☐ Fully ☐ Partially ☐ No

C2. Objectives	The objectives of this workshop are listed below. Please circle on a scale of 1 to 5 if, in your opinion, the objectives have been achieved. The scale ranges from 1 (the objective has not been achieved); to 5 (the objective has been achieved).

Please list specific objectives of the training workshop

1. To discuss ongoing transformation and changing paradigms within the Agricultural R&D Arena.

1	2	3	4	5
☐	☐	☐	☐	☐

2. To gain better understanding of the processes and issues related to design, implementation, management and evaluation of research partnerships.

1	2	3	4	5
☐	☐	☐	☐	☐

3. To discuss the key skills required for effective partnership and management.

1	2	3	4	5
☐	☐	☐	☐	☐

4. To share the experiences and to discuss the principles and good practices for effective partnerships and networks.

1	2	3	4	5
☐	☐	☐	☐	☐

5. To provide a platform for co-learning

1	2	3	4	5
☐	☐	☐	☐	☐

D. Was there a good balance between theory and practical work?

☐ Yes ☐ No

Please explain _____

_____

E. Strengths and weaknesses

Please list what you consider to be three strengths of the workshop.

1.

2.

3.

Please list what you consider to be three weaknesses of the workshop.

1.

2.

3.

F. Features	Very good	Good	Fair	Poor
Accommodation	☐	☐	☐	☐
Meals	☐	☐	☐	☐
Lectures/presentations	☐	☐	☐	☐
Discussions	☐	☐	☐	☐
Papers/handouts	☐	☐	☐	☐
Organization and management	☐	☐	☐	☐
Quality of visual aids	☐	☐	☐	☐
Quantity of visual aids	☐	☐	☐	☐

G. Additional topics What additional topics would you have liked included in this training?

H. Topics to be eliminated In your opinion what topics/seminars should be considered for eliminations?

I. How useful is this training for your day to day work? On a scale of one to five (1=not useful; 5=very useful) Please rate the usefulness.

1	2	3	4	5
☐	☐	☐	☐	☐

J. Will you be able to train others in what you learnt.

☐ Yes ☐ No ☐ I am not sure

K. How would you rate your knowledge and skills on this subject before and after the training? (Use a scale of 1–5, One being very low to five being very high).

☐ Before training

☐ After training

L. Would you recommend this workshop to your colleagues?

Yes ☐ No ☐

Please explain _____

_____

_____

M. Any additional comments	Please use the space below to write down any additional comments you may have.

Thank you very much for your valuable input.

Registration form

Learning workshop on strengthening partnerships and networks in agricultural research for development

Date:

Last name		First name			
Function in this meeting	☐ Participant ☐ Facilitator/presenter ☐ Organizer ☐ Observer ☐ Other _____	Title	☐ Dr ☐ Mr ☐ Mrs ☐ Ms ☐ Ing ☐ Other	Sex	☐ M ☐ F
Degree	☐ Diploma ☐ BSc ☐ MSc ☐ PhD	Other degree			
Position (type)	☐ Policymaker ☐ Senior manager ☐ Middle manager ☐ Researcher ☐ Information specialist ☐ Technician ☐ Other _____	Position (title) Department			
Organization					
Name of your immediate supervisor					
Your organization's address					
Telephone no.		Fax. no.			
E-mail					

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Annex 1: Sample MoU

Dated this _____[date]_____ day of _____[Month]_____ _____[Year]_____

Memorandum of Understanding

Between

International Livestock Research Institute ('ILRI')

and

XYZ ('XYZ')

DRAFT 061205

[•] indicates points on which the relevant details should be inserted in the specific contract.

Memorandum of Understanding

This Memorandum of Understanding ('the MoU') is made this day of 200_ by and between the International Livestock Research Institute, an international research institute of Post Office Box Number 30709–00100 Nairobi Kenya with its headquarters in Kabete, Old Naivasha Road, Nairobi, (hereinafter referred to as 'ILRI') of the one part and ……. a [•] of [•] (hereinafter referred to as 'XYZ') of the other part.

WHEREAS

a. ILRI is a non-profit international research institute working at the crossroads of livestock and poverty, bringing high-quality science and capacity building to bear on poverty reduction and sustainable development for poor livestock keepers and their communities in all tropical-developing regions.
b. ILRI's research and research-related activities are implemented in collaboration with other institutes from both developing and developed regions.
c. XYZ is engaged in [•].
d. The Parties are desirous of entering into this MoU to foster their objectives as set out in clause 3 below.

1. Definitions

• In this MoU' where the context so permits, the following terms and phrases have the meanings set out herein:–

- 'Business Day' means a day (except a Saturday or Sunday) when banks are normally open for ordinary business in Nairobi, Kenya;
- 'Effective Date' means the date of this MoU;
- 'LoA' means the Letters of Agreement to be entered into by the Parties relating to specific projects, pursuant to this MoU;
- 'Parties' means ILRI and XYZ together and the term 'Party' means either of them as the context so permits and the terms 'Party' and 'Parties' mean their respective and joint successor(s), personal representative(s) and assignee(s) as the case may be; and
- 'Term' means the term of this MoU as specified in clause 2 below.

2. Commencement

This MoU shall commence on the Effective Date and remain in force for [•] years (the 'Term'), subject to automatic renewal for similar periods unless earlier terminated in accordance with the provisions of clause 12 below.

3. Objectives

The Parties' Main Objective under this MoU is to establish a long-term relationship for purposes of exploiting their complementary research skills to further their respective missions (the 'Main Objective').

In particular, ILRI and XYZ will explore possibilities of collaborating in the following broad areas of research;

In furtherance of the Main Objective each Party shall provide such staff support, institutional services and materials as may be necessary for the implementation and achievement of the Main Objective.

4. The letters of agreement

The Parties shall on a case to case basis negotiate and agree on the terms of each LoA without thereby being under any obligation to enter into any LoA except by mutual agreement.

The Parties shall select, develop, plan and jointly implement the specific activities through the LoAs.

Each LoA shall specify:

4.3.1. name of the specific project to be undertaken;

4.3.2. specific objectives and procedures of the project;

4.3.3. contributions and responsibilities of each Party;

4.3.4. amount and source of funding, including schedule of payment and reporting;

4.3.5. intellectual assets and intellectual property ownership issues;

4.3.6. special terms and conditions of performance of the LoAs;

4.3.7. rights and obligations of each Party; and

4.3.8. any other provisions as may be relevant and/or applicable.

Each LoA shall be expressed in English and shall only be effective and binding on the Parties if signed by the duly authorized officers of the Parties.

5. Records

Each Party shall be responsible for maintaining its own records of the activities undertaken pursuant to this MoU.

6. No financial commitment

This MoU carries no financial commitment on either Party.

7. No exclusivity

The MoU does not obligate either Party to work exclusively with the other on any project whatsoever or constitute either Party an agent of the other. However, once an LoA has been executed by the Parties, neither of the Parties shall undertake the same project in collaboration with any other person unless agreed otherwise in the LoA.

8. Independence of parties

Nothing contained in this MoU shall constitute either Party, a partner or agent of the other for any purposes whatsoever.

Neither Party has the authority, either express or implied, to enter into any agreement, incur any obligations on behalf of, or commit the other Party in any manner whatsoever, except as is provided in this MoU or as may be agreed in writing from time to time.

9. Amendments

No variation or amendment to this MoU shall be effective unless in writing and signed on behalf of each Party by a director or other duly authorized person (as the case may be).

10. Legal effect

Whereas the Parties intend to be legally bound by the LoAs, this MoU is entered into in good faith and solely as a basis for entering into contractually binding relationships through the LoAs. Accordingly, this MoU is not intended by the Parties to be legally binding upon them and failure to enter into any LoA shall not constitute any breach capable of raising any legal liability on the part of either Party.

11. Notices

Any notice or other communication under or in connection with this MoU is to be in writing in the English language and signed by or on behalf of the Party giving it. The notice or communication may be served by being delivered personally, by facsimile transmission or sending it by registered post to the Party due to receive the notice or communication at the address set out in Clause 11.3 below or such other address as that Party may (for the purposes of this Clause) specify from time to time in writing to the other Party.

In the absence of evidence of earlier receipt any notice or communication so served is deemed to have been received:

i. in the case of personal service, on delivery;
ii. in the case of facsimile transmission, on completion of the transmission except where the time of transmission is not during the addressee's normal business hours it shall be 9.30 a.m. on the next business day and provided electronic confirmation of the transmission is obtained; and
iii. in the case of registered post, five (5) days from the date of posting.

The addresses are: –

a) In the case of the ILRI: –

Name: International Livestock Research Institute

Physical address: ILRI Campus

Kabete, Old Naivasha Road, Nairobi, Kenya

Fax number: +254 20 631499

Postal address: P.O. Box 30709–00100, Nairobi

Marked for the attention of: Director-General

b) In the case of XYZ: –

Name: [•]

Physical address: [•]

Fax number: [•]

Postal address: P.O. Box [•]

Marked for the attention of: [•]

Address for service of legal documents

The Parties agree that the address for service of legal documents shall be the same address set out in sub clauses 11.3 above.

Change of address

A Party may change its address for the purpose of this Clause, by notice in writing to the other Party, which change of address must include a physical address and must be acknowledged as received by the other Party in writing in order to be effective.

12. Termination

Either Party may terminate this MoU by giving at least one (1) month prior written notice to the other.

IN WITNESS WHEREOF this MoU has been duly executed by the Parties the day and year hereinbefore set out.

SIGNED by _____)

the duly authorized representative of ILRI in the)

presence of :–)

Signature: _____)

Name: _____)

Address: _____)

SIGNED by _____)

the duly authorized representative of XYZ in the)

presence of :–)

Signature: _____)

Name: _____)

Address: _____)

Annex 2 Toolkits for partnership and network design and management

1 Introduction

There is a dearth of simple tools and approaches that enable research and development organizations to benchmark the status of their partnerships, assess their effectiveness and performance and to reflect on their experiences and lessons in partnerships. In addition, in-depth studies of partnership processes and benefits are very limited, and the strength of the available literature is also questionable as it is mostly advocacy type (Farrington et al. 1993; Shah 1995; Carney 1998; Morse 1996).

For an organization to realize the full potential and the collaborative advantage of partnerships, it must be skilled not only in identifying the right partners, but also in managing the partnership very effectively. Strong interpersonal leadership, management skills, and facilitation skills are essential to increase the likelihood that collaborative partnership will produce the anticipated outputs and impacts. Some of the salient skills and tools that could be used to design, implement and evaluate partnerships and networks are presented in this chapter.

2 Tools for partnership design

2.1 Pre-partnership phase

2.1.1 Rich pictures

What is a rich picture?

'Rich pictures' were developed as a tool for exploring a complex situation in soft systems analysis by Peter Checkland and colleagues at the University of Lancaster. He called them 'rich' because the idea is too gain the 'richest possible picture of the problem situation' (Checkland 1981). A rich picture should not try to impose too much structure too early in the process of exploration. A rich picture has few rules. It can show:

- Important actors and their relationships (but it is not just an actor or Venn diagram).
- Elements of structure and process, (but it is not just a system model or flow chart).
- Relationships between problems, (but it is not just a problem-causal diagram).
- Influences on the situation, (but it is not just an influence diagram).

The point is that all these other sorts of diagrams try to clarify the situation and it precisely the lack of clarity that can be important at an early stage of exploring the situation. Anything that seems relevant can be included in a rich picture and it should include subjective information such as:

- Stakeholder perspectives, prejudices, concerns and conflicts (without trying to represent a 'truth').
- Questions and uncertainties that seem relevant to the problem situation

Rich pictures usually use symbols, icons, cartoons and drawings and as few words as possible. This is because symbols and drawings allow a more intuitive impression and expression.

When to use rich pictures

Rich pictures can be useful to:

- Keep an open mind, broaden your thinking, and think creatively.
- Help understand and summarize a complex situation.

- Unearth the critical issues—unearth the 'real' problem.
- Build a common understanding of the situation within the team.
- Help communicate your team's understanding of the situation to others.

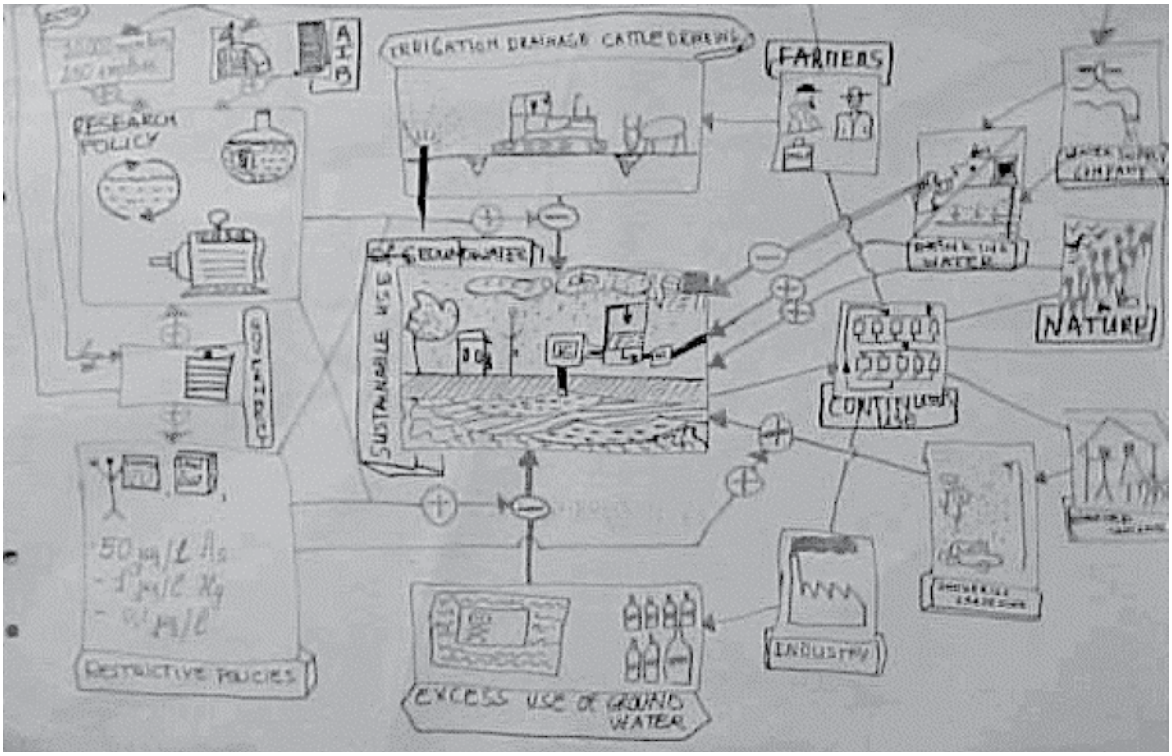
Steps

Again, there are few rules to a rich picture.

- Discuss with your team colleagues the main purpose of the diagram, and who is going to draw it, and with what information. How will you make sure the picture is as 'rich' as possible?
- You can start by visualizing the central theme or issue (as identified by the client) in the middle of a large sheet of paper. Try to express this as a simple picture or cartoon.
- Add elements of structure (e.g. important stakeholders) that seem most relevant to the problem situation. Don't worry about the layout or shape of your diagram at this stage (you can always redraw it later). You are a stakeholder (or you represent one or more stakeholders): so include yourself or your team in the diagram—What is your role, view of the situation?
- Add any activities or processes that seem to be an important part of the situation.
- As you add the elements to your picture, try to express any interrelationships between these items of structure and process, or the absence of such a relationship where you might think there should be one.
- If you have conducted interviews with stakeholders, try to include the main issues as seen by the different groups (i.e. don't just stick to 'factual' information, but include the different perspectives). A common way of doing this is to use speech bubbles.
- Look for areas that are confusing, or are not clear—try to express these.

Example

This example of a rich picture is based on the problem of groundwater use in N. Brabant described in the previous section (stakeholder maps). It was drawn to express the different aspects of the problem: water use and stakeholder conflict. The diagram was then used to focus the study to specific aspects of groundwater use.



2.1.2 Actor analysis

Actors are all those people who have a stake (or share) in a particular issue or system. Stakeholders can be groups of people, organizations, institutions and sometimes even individuals. Other terms sometimes used in a similar way to stakeholders are 'actors' and 'interest groups'. The word 'actors' stresses that stakeholders are active and interact with each other. The use of the words 'interest groups' indicates that people can be grouped according to a common interest. In this document, we use the terms 'actors' and 'stakeholders' synonymously.

Actors can be at any level or position in society, from the international to the national, regional, household or intra-household level. Actors include all those who affect and are affected by policies, decisions or actions within a particular system.

Why is an actor perspective important?

Agricultural development often fails because the actors are not given enough consideration. Each actor has a different interest in the situation. Actor analysis is becoming more common in project settings. It attempts to deal with actors' multiple and often conflicting views, interests and objectives.

The term actor analysis was first used in management science for identifying and addressing the interest of different actors in business. Nowadays, actor analysis is frequently used for:

- policy formulation
- project formulation
- implementation and evaluation
- understanding and analysing complex situations in natural resource management.

Actor analysis is a way of understanding a system through its actors. It looks at their interest, objectives, power and relationships. Actor analysis will also show existing patterns of interaction between actors. It will show conflicts and can help find ways to resolve them. By understanding the system, it is possible to facilitate change.

In a project setting, actor analysis can help to improve performance:

- By helping to identify trade-offs between different actors objectives, and the conflicts between them. As a result, project efficiency and effectiveness can be improved.
- By helping to evaluate policy and project impacts. E.g. the distributional, social and political impacts of policies and projects. It can highlight the needs and interest of powerless people.

In considering actors, it is sometimes helpful to consider their importance and influence.

- Important actors are those whose needs are important to a project or study.
- Influential actors are those who have the power to control decisions in an activity or who can influence others in the decision-making process.

Importance and influence are not the same. For example, rural women farmers might have been identified as an important actor for equality purposes, but they may have traditionally little influence in decision-making processes.

Actor analysis responds to the question: which and whose interests matter in agricultural R&D intervention? It sets the domain of people, groups and organizations that should be taken into account when planning intervention by examining their interest and potential impact on them. The basic output is the identification and description of actors that an intervention is explicitly designed to help, as

well as those whose involvement is required to make the intervention work. The identification process disaggregates these actors in different characteristics, including:

- Structural: gender, age, geography (location or rural/urban), occupation
- Economic: employment sector, firms or business associations
- Political
- Social

Identifying actors is an iterative process. New actors are often identified by existing ones. To avoid missing important actors, it is important to review this regularly. Some actors will be important at the beginning of the process but not at the end. Others may not be important at the start but become more important later. The final selection of actors depends on the people responsible for the assessment. They have to develop criteria for identifying who should be considered actors.

Actor analysis uses groups like: communities, government or private sector. They are considered to be quite homogeneous. Obviously they are not. Communities are socially diverse—with individuals being differentiated by gender, caste, wealth, age, occupation etc. All these give social identity but divide people and cut across 'community' boundaries. The researchers and the actors themselves should determine which groups need to be subdivided, as and when the different interests become significant to the research questions or project.

While secondary literature is an important resource, actor analysis cannot be carried out without key informant interviews that identify specific actors relevant to the sustainability of the intervention. While some important information may be quantifiable, other information is inherently more subjective. Accordingly, the reliability of findings—especially on influence and importance—depends on direct interaction with diverse actors. Limiting interviews to a narrow group, such as government officials or big business, can generate a highly distorted picture of interests, intentions and influence.

For actor analysis, actor identification matrix, actor role matrix, actor perception matrix, information needs matrix, actor benefits matrix, actor importance and influence matrix and, septagrams can be used.

It should also be noted that the use of these tools by themselves does not make a process 'participatory'. The information can be gathered on a consultative basis, analysed and acted upon by a research team; or the matrices can be drawn up, analysed and acted upon by the actors themselves (albeit with an outside agency acting in a facilitative role). Whether a process is participatory depends not on the tool, but how it is used.

2.1.3 Actor linkage analysis

In undertaking any intervention, the first step is to identify the key actors who bring about or prevent change in an innovation system i.e. identifying the actors who are the actual drivers or hindrance to change. The breadth of analysis may vary depending on the context and focus. The emphasis is on identifying specific social groups or actors in a specific location at a given point in time. In actor analysis, it is the people who make decisions which define the groups. For example, 'research' does not happen; it is the people who do research, so the category would be 'researchers'. The common tools used to analyse actor linkages are: Actor linkages map, actor linkage matrix (ALM), actor determinant diagrams and, actor time line. These tools are briefly discussed in the following sections.

Actor linkage map

This is a useful starting point for discussing relationships and flows of information in an innovation system. The key actors are shown on a map with arrows between them indicating flows of information. In an actor linkage analysis, there is always an arm going in each direction. Note that single two-headed arrows are never used, as one of the main points of the mapping is to examine power relationships in the control of flows of information on different directions. The intensity of these flows can be illustrated by the width of the arrows. See Figure below for illustration. It is important to make sure that these maps need to represent actual flows of information. The map will be used as a guide to discussions of formal and informal mechanisms used to transmit and control information.

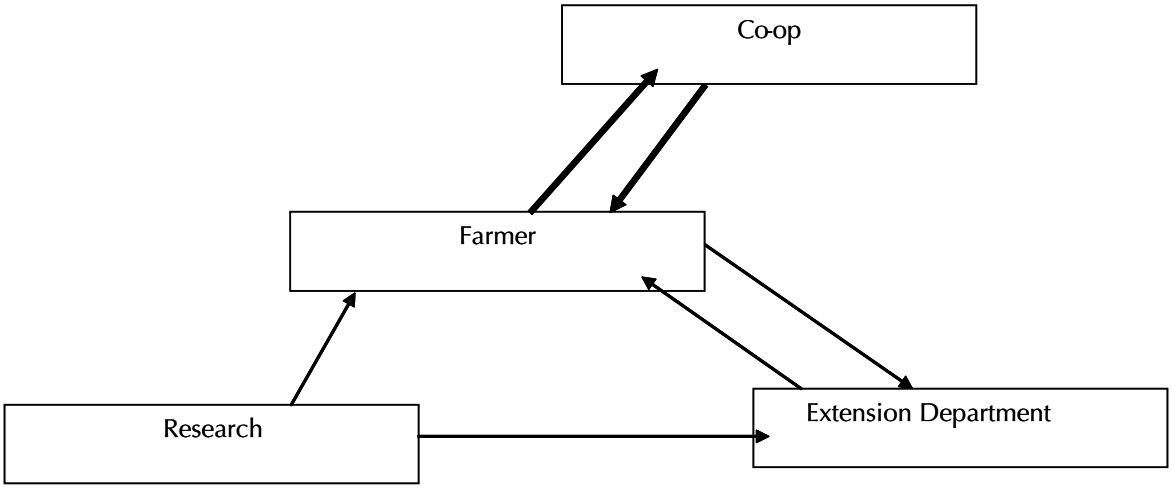


Figure 2.1 *Example of an actor linkage map.*

The actor linkage maps could be done individually with each of the actors. We could do what are called 'ego-based maps'. Here we look at individual actors and see who they link up with. All the ego-based maps can be synthesized to come up with the innovation system map.

For an ego-based map, we place the actor we are talking to in the centre and ask them to identify key actors they have linkages with and draw them up. We could ask them to distinguish whether the linkages in their perception are strong or weak (use and strong and dotted lines to represent them). We could even use different maps for past, current and anticipated situations, where relevant. This would help us understand the changes in/dynamics of the system.

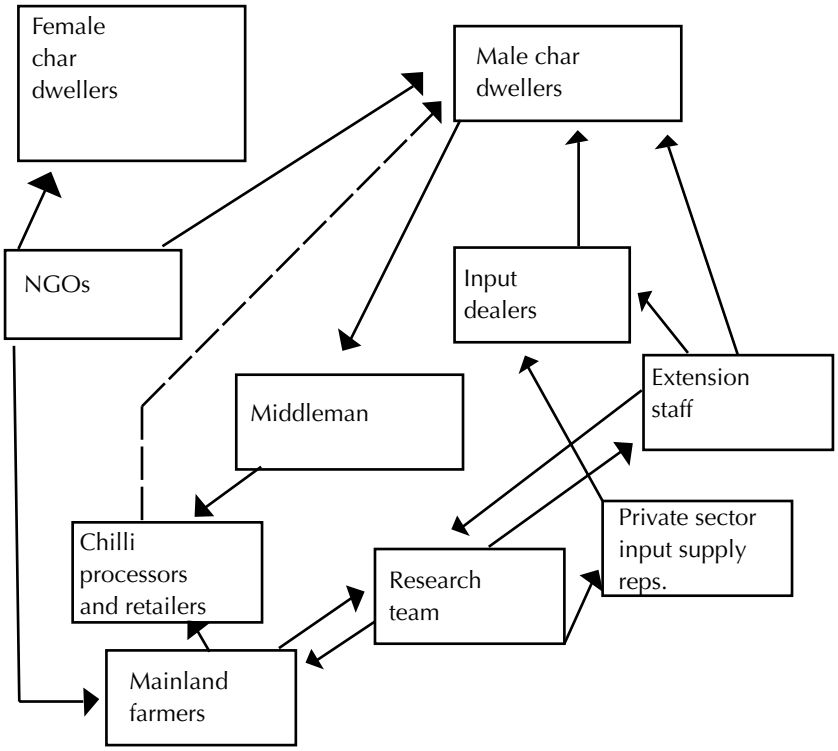
Creating an ego-based linkage map

Maps can be drawn up by one actor or in a group.

- Put the name of the actor we are talking to in the centre of the page.
- Ask the actor who they link with for different aspects of their enterprise.
- Use arrows to show direction of flow of information or services.
- Use thick or thin arrows to indicate the importance of the link.

The actor linkage maps are particularly useful when focusing on one actor and his or her linkages with other groups. As the number of actors increases, however, the map can become too complicated. At this point, it may be useful to work with maps of part of the system or move to an actor linkage matrix.

Map showing key actors in a Bangladesh chilli innovation system



Source: Biggs and Matsaert (2004).
Figure 2.2. *Actor linkage map.*

Actor Linkage Matrix (ALM)

ALM identifies all the actors and shows the links between major actors in an innovation system. It complements the actor linkage map. In a Matrix, this is represented by listing actors along the vertical and horizontal axes. The cells in the matrix represent flows of information from the actors in the rows to actors in the columns. In the Matrix, all cells can be identified by their co-coordinators (numbers for rows and letters for columns are shown in the box below).

		A	B	C
	Actors	Researchers	Farmers	Manufacturers
1	Researchers		1	
2	Farmers			
3	Manufacturers			2

Source: Biggs and Matsaert (2004).

The matrix basically plots the same information as the map, but has additional advantages such as:

- It can deal with more complex situations and more actors (maps get very messy)
- It has a cell for every possible linkage, and so encourages one to explore all possibilities
- It is a useful role in helping to pinpoint particularly significant links, e.g. strong links, coalition groups, weak links etc. This makes it more useful than the map for planning, implementation, monitoring and evaluating change
- It enables users to quantify the strength of linkages using symbols in each cell, e.g. plusses and minuses, or telling such as s (strong), m (medium), w (weak), dn (don't know)

- It enables users to condense and store a lot of information about linkages in the spreadsheet ALM (each cell reference can be linked to a text). Therefore, it is a useful tool for documenting a given situation or the outcome of an event.

The actor linkage matrix is best used with a small group, with people familiar with the technique or after a discussion to summarize findings. We could do the actor linkage matrix with each of the actors, but we can also do it with the synthesis map.

Creating a linkage matrix:

- Use a spreadsheet program, e.g. Excel.
- Plot key actors on vertical and horizontal axis
- Now each cell in the matrix represents the flow of information from the actor on the vertical axis to the actor on the horizontal.
- Use symbols or shading to show information flowing from one actor to another. Use an agreed code and fill in for each actor linkage.

Each cell in the matrix can be linked to a piece of text describing the linkage and explaining the ranking given.

- As with the actor linkage maps, a separate matrix can be used to represent past, present and possible future situations.
- For planning and monitoring purposes, symbols can be used to indicate linkages which are targeted for interventions or which have been impacted by a particular activity.

Actor determinant diagram

This is similar to a problem tree. It is intended as a group discussion (or individual thinking) tool to analyse the nature of a particular linkage. The starting point is a cell of the actor linkage matrix or a linkage in the map. Normally, this would be the one that is particularly significant (and might need to be strengthened, weakened or learnt from). The diagram maps weakening and strengthening forces on the linkages and helps a group to identify possible areas of intervention.

This tool helps us to open up a discussion about the feasibility of different actions within the current social and political context. It is a useful tool for building an action plan from the analysis of a particular situation. Therefore, it is often carried out with the key actors who would be involved in any future 'implementation' of suggested actions.

Maps and matrices only show the relative strength of relationships and don't give an indication of issues of control, transparency, relative satisfaction with links etc.

The determinants diagram leads from analysis of a particular situation to the development of action plans. For this reason, it is most usefully used with key actors who would be involved in any future implementation of suggested actions.

Steps to build a determinants diagram

- We have to identify linkages on our matrix which look particularly important or significant. We have to choose only those which we think are most critical.
- The group must decide which links to focus on.
- We have to work with groups of actors to look more closely at this link (could be a mixed or single actor group, depending on how well we think the group dynamic will work).

- Write the linkage in the centre of a flipchart. Ask the group to start by discussing the strengths, examples of successful linking, good experiences etc. Mark these in the area above the link.
- Discuss any problems experienced with this link. Mark these in the area below the link. For each problem, try to get to the root cause, before going on to discuss the next.
- Now for each root cause look for potential solutions. Try to encourage the group to make these active solutions (not things other people should do for them).
- For each strength, look at how this could be built on to further improve this linkage.
- The final result will be a list of ideas for action. Obviously some 'areas for intervention' (what to do) will be more possible to implement than others. The exercise helps open up a discussion about the feasibility of different actions within the current context.

Actor linkage matrix used to monitor partnership building

		A	B	C	F	H	I	K	L	M	N	P	Q	R	S	U
		Male char dwellers	Female char dwellers	Local leaders	Local middlemen	Dealers	Local government staff	Bank staff	Local NGO staff	National government staff	Researchers	National middlemen	Chilli processors and retailers	Input suppliers	Media	Project team
1	Male char dwellers	d	d					a	a	a		a				11
2	Female char dwellers	d	d					a	a	a		a				11
3	Local leaders															C
6	Local middlemen															13
8	Dealers															14
9	Local government staff															3
11	Bank staff															3
12	Local NGO staff															2
13	National government staff															4
14	Researchers	a	a				a	a	a	a						1
16	National Middlemen															5
18	Chilli processors and retailers															10
19	Input suppliers															8
20	Media															6
21	Project team	11a	11a	c	13	14	3a	3a	2ab	4a	1ab	5	10	9	6	

Source: Biggs and Matsaert (2004).
Figure 2.3. *Actor Linkage Matrix.*

An actor time line is a listing of key events in the evolution of an innovation system. Getting a group of key actors to construct an actor time line of key past events for a particular innovation system can build a more comprehensive understanding to past change processes and a better understanding of the current situation. The key question to be answered is which actor made key decisions at what time in the past? Once again, the emphasis is on human action; it is important to specify who took what decisions, when and where. This will enable us to understand the actual causal effect relationship in a

particular innovation system. It also gives a feeling for the dynamics of an innovation system and where it is currently heading.

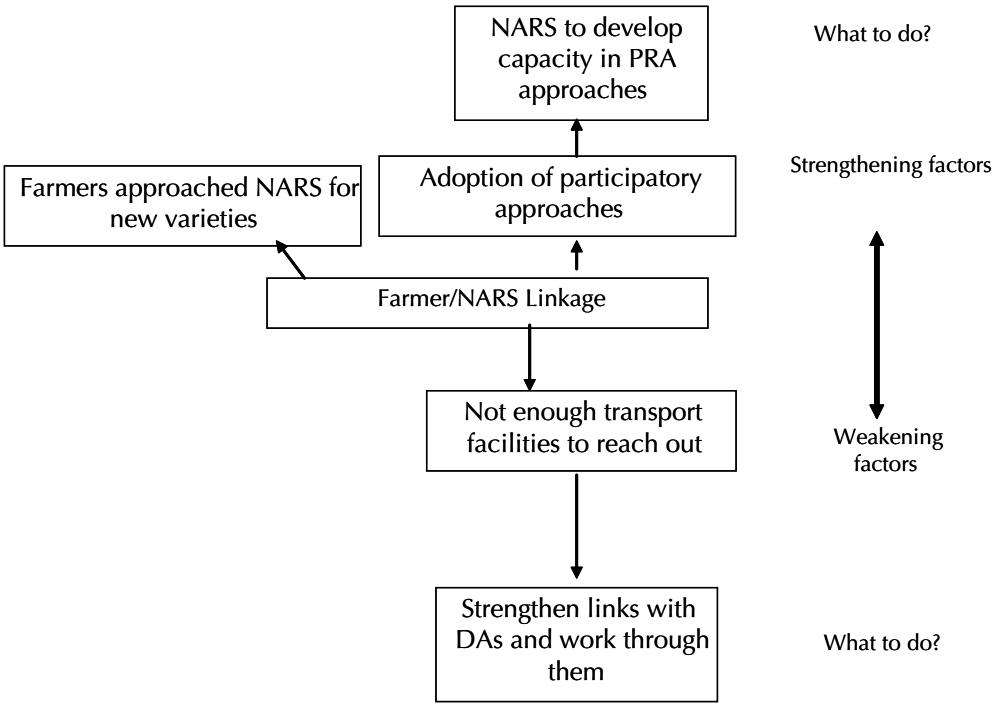


Figure 2.4. *Actor Determinants Diagram.*

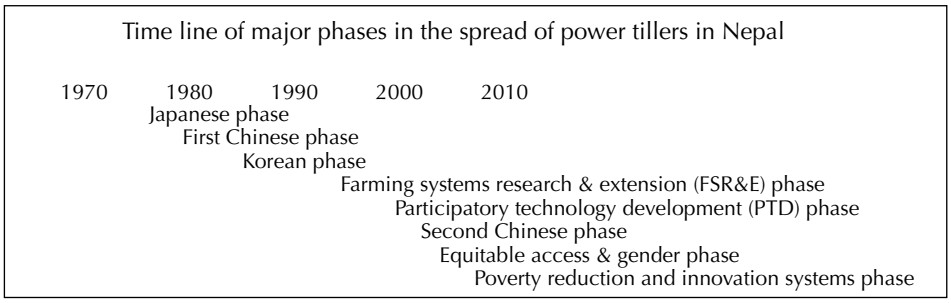
Actor time lines

It is important to note that actor time lines are used here more as a learning and reflection tool, a way to establish new common ground in a coalition of partners, and as a tool to guide future action. The time line can either be given as a list of events, with dates alongside as a figure with a sequenced bar chart of actor events over time, sequencing and the path of causation of past events.

Time lines can be generated through a review of literature, individual interviews (particularly with people with a long association with the innovation system) and group discussions. Usually a combination of all these will get you the fullest information. Group discussions with knowledgeable people in the sector are useful to analyse and discuss the implications of the timeline, e.g. trends and new directions.

For the group discussion, use a flipchart or blackboard.

- Start with the earliest recorded memory in this innovation system
- Now mark key innovations since that time.
- On the time line these can be linked to key events in local or national history, e.g. independence, the year of the big flood etc.
- For each innovation marked on the line, note actors who created or helped the spread of this innovation. These are the key actors.
- Discuss implications: how has this innovation system changed? Where is it heading now? Who have been the key actors in the past and present?



Source: Biggs and Matsaert (2004).
Figure 2.5. *Example of an actor time line.*

2.1.4 Network mapping

Innovation is a process leading to a productive use of knowledge for economic and/or social purposes. Innovation process is an interactive, non-linear social process; and social actors rarely innovate in isolation. The central proposition of the innovation systems approach is that the innovative capability depends on the quality and density of relationships among producers and the relationship between producers or producer groups and enterprise (market) and supportive services—public and private organizations. Thus, knowledge networks, resources linkages and partnership are crucial to understand and analyse innovation systems. Network analysis has been developed to understand these relationships in a specific social context (Clark 2006).

Rural households' and social groups' ability to access resources, goods and services depends on their membership and position in networks. Information is one of the crucial resources that flow through networks. Network analysis, among other things, helps to identify both information flows and bottlenecks, which can inform the design of a strategy to encourage horizontal sharing of information in the existing social systems.

More often than not, we find a number of actors—community-based organizations, NGOs, public and private organizations—engaged in development activities and interactions at the local or higher levels. Visualizing community level and organizational networks can help to understand actors, interactions between actors and identifying the most influential actors. Network analysis can be used as a diagnostic tool during planning development projects to identify similar initiatives to avoid duplicating efforts and facilitate linkages and interactions among actors; identify the drivers of change, possible conflict of interest, or power struggle. Network analysis is a good entry point for enhancing coordination of multistakeholder governance; and network maps are used for monitoring progress, with respect to improvements in relationships among relevant actors. The visual graphic are able to capture the attention and imagination of rural actors who are usually illiterate. The process of participatory net-mapping in itself facilitates group discussion, reflection and group visioning on ways to improve linkages and quality of interactions among relevant actors and ensuring inclusiveness.

Drawing a network map

Net-map is an interview-based mapping tool that helps people understand, visualize, discuss, and improve situations in which many different actors influence outcomes (Schiffer 2007). Net-map helps determine:

- what actors are involved in a given network
- how they are linked

- how influential they are and
- what their goals are.

A step-by-step guide to using the net-map method (adapted from Schiffer 2007, 7–18).

Preparation

Before you start using net-map and interviewing participants, make sure to clearly define the overarching issue you want to tackle. Do you want to know who can influence the success of a specific project that you are planning? Or do you want to generally map out the network environment of your organization? Are you interested in a specific conflict and how the network actors prevent or support conflict resolution? Are you examining a defined group of people (for example, all members of a working group) or do you simply want to find out who belongs to the network (for example, all those who can influence the course a reform will take)?

Pre-testing

Discuss the overarching issue you wish to examine, the defined links, and the goals with someone who is knowledgeable about the social environment you want to research. Using the guidelines presented below, draw your own Influence network map of how you see the situation to determine if your framework needs to be modified. You can continue the pre-testing process by interviewing and drawing maps with people similar to those you want to participate. You can also use these pre-testing activities to discuss your choice of words. Should you use the terms 'power', 'influence', 'authority', or a descriptive phrase like 'someone whose word has weight'?. If you call one link 'giving support,' do people think it means 'giving words' or 'giving money,' or is the term may be limited to the context of party politics? It is important to adapt the terminology to your experience.

Tips:

- Limit relationships in the map to four.
- Use small 5 cm by 5 cm post it notes for drawing the nodes.
- If you are dealing with only one project in the workshop, and you are working with a group of more than 8 participants, then split them into four groups and get each group to draw the map for just one relationship (e.g. one group draws the funding network, another does research etc.)
- Use poker chips/checkers pieces for the influence towers.

Question 1: Who is involved?

Place a mapping sheet in front of your interviewee and ask him or her to name all individuals, groups, and organizations that can influence the issue you are examining. The questions could include: Who can influence the restructuring of our organization? Which groups and individuals are involved in this inter-community conflict? Who has influenced this change of policy?

Encourage your interviewee to mention every actor that comes to mind, not only those who have formal decision-making capacity in the process. Write every actor on an actor card and distribute the cards on the map. Give your interviewee time to think this through properly and allow him or her to add actors throughout the interview. Before going to the next question, read out loud all actors, since this might make the interviewee think of other actors to add. In some cases, you might insist that the interviewees add themselves to the actor list. If you are working with illiterate interviewees, let them pick figures for each actor and place them next to the actor cards; this way, it will be easier for them to remember who is who. You might choose different colours of cards for different groups of actors (use pink cards for all governmental actors, for example, or green ones for all non-governmental actors). This also helps to visually structure of the map more clearly.

Question 2: How are they linked?

You have defined the links you want to look at through your preparation and pre-testing. Explain to your interviewee that you want to find out how all these people and organizations are linked to each other. You will connect the actor cards with arrows indicating that something (such as information, command, or money, for example) flows from one actor to the other. In cases where the actors exchange something, two arrows pointing to opposite direction are used. In cases where two actors exchange more than one thing, you can draw a link that has a number of arrow heads of different colours. Present the kinds of links by colour and explain what each colour represents. For example, red represents money, black represents command, green represents advice, and blue represents information.

It makes sense to start with the link that you expect to be the least common, finish this colour, and continue with the next. In this way, the picture will develop slowly and the process will be less messy. With complex maps, you might need to guide your interviewee through the process and make sure that he or she does not forget a link, though it is important you do not push the interviewee to link actors just to please you. Make sure your interviewee understands that you are not looking at how links should or will be, but at how they currently are.

Question 3: How influential are they?

To avoid misunderstanding, it is important that both the interviewer and the interviewee share the same understanding of the term 'influence'. In your pre-testing and discussion, you will have developed a commonly agreed-upon definition of 'influence'. *It is important that the interviewee understands that the question is about the ability of the actor to influence a specific issue, and not about formal hierarchies*. The question is: how much influence does this actor have in this specific field/activity/organization—and not in a more general sense. For example, chief administrator of a region will be seen as more powerful in a general sense than administrator of a district or head of a district office of agriculture and rural development. However, when it comes to influencing the implementation of a specific intervention relating to agriculture, the latter tends to have much more impact than the administrators.

Emphasize that the sources of influence could be diverse, ranging from legitimate decision-making capacity, through giving advice or incentives, to bending or breaking the rules. Once this understanding of 'influence' is established, the interviewee will be asked to assess who has what amount of influence on the given issue. Choose one actor figure for every actor and put it on an influence tower. This tower might consist of a certain number of influence pieces according to how strongly this actor can influence the issue at stake. Explain the following rules to your interviewee: The more influence an actor has the higher the tower. The towers can be as high as the interviewee wants. Two actors can have towers of the same size. If an actor has no influence at all, the figure is put on the ground level without any influence tower.

After setting up the influence towers, verbalize what you see, starting with the highest tower. For example: You have given the chief administrator of the district the highest tower with a height of five tower pieces, followed by the head of district office of agriculture and rural development on towers of four, and DAs with two tower, and finally you say the resource-poor subsistence producers have no influence at all—no tower. Encourage the interviewee to adjust anything if he or she has second thoughts. This is especially necessary in complex influence networks. If you change one tower, make sure to adjust the others accordingly. Once the interviewee is content with the whole set-up, note the height of the influence towers next to the actors' names on the network map.

Starting with the most influential actor, you now begin to ask the interviewee about the sources and effects of influence. Your questions will vary according to your general goal and to the overarching issue you are exploring. As you become more familiar both with the tool and the situation you are analysing, you will see that it becomes easy to see at first glance what is special, strange, or noteworthy about a specific influence network map. Your questions may include: I see you have put this actor on the highest tower. Why? Where does his/her influence come from? You say that these two have the same level of influence. What happens if they disagree? Is their influence based on the same grounds? Does it have the same range? I have heard there is a conflict between these three actors. Could you explain to me what it is about? You have linked this actor to so many others, but you say he doesn't have much influence—why is that so?

Discussion

Now you have completed one Influence network map. Discuss the result with your interview partners. Depending on the goal of this specific mapping process, you might ask your interviewees to think strategically about the network and develop ideas to improve the situation in the future.

How can we draw network maps using software?

We use two programs to draw the network maps. First we put the information from the workshop-drawn network maps into a text file which are then imported into UCINET. UCINET puts the text file into matrix format which we then plot in NetDraw.

2.1.5 Partnership readiness questionnaire A

Please use the following seven-point scale. 1 = low degree of confidence. 7 = highest level of confidence. At the end, total up all your points. The scores reflect the degree of confidence in your readiness. Lower scores indicate a real concern, perhaps the partnership is not right for you right now; middle score says you have some concerns, but with special attention devoted to what concerns you most, you think you should proceed; and the higher scores—'go for it'—it's a winner.

(Circle one)	
1. Does my organization have the resources—financial, people, and technology—needed to contribute our portion of the partnership being considered?	1–2–3–4–5–6–7–NA
2. Can we honestly say these resources can be accessed when required? (Meaning they have not already been committed to several efforts and are seriously overloaded.)	1–2–3–4–5–6–7–NA
3. If we cannot contribute our entire share of financial resources, do we feel we have a good chance of obtaining additional donor funds?	1–2–3–4–5–6–7–NA
4. Are we willing and able to work in collaboration and mutuality with the other organizations that comprise this partnership?	1–2–3–4–5–6–7–NA
5. Are we willing and able to share control and participate in shared decision-making?	1–2–3–4–5–6–7–NA
6. Are we willing and able to be flexible about how things get done and not to be too insistent that it be done our way?	1–2–3–4–5–6–7–NA
7. Have we in the past and are we now able to work with our less resourced partners with mutual respect, avoiding any sense of domination and superiority? Would these organizations give us a high rating in this regard?	1–2–3–4–5–6–7–NA
8. Is there support for this project within our organization, and would this partnership become a valuable part of our organization's portfolio?	1–2–3–4–5–6–7–NA
9. Can we commit to devote the leadership and management time required of us in this partnership effort?	1–2–3–4–5–6–7–NA
10. Have we had sufficient experience in working in partnerships so that we can say that our 'partnering' competencies are good enough to carry out our performance commitments?	1–2–3–4–5–6–7–NA

Total: _____

Partnership readiness questionnaire B

Rate each of the eight items listed using the following five-point scale as a guideline. Place the appropriate number from this scale in the space located to the left of each item. Obtain a total readiness score by adding together you eight ratings.

Five points scale:

5 = Strongly agree

4 = Moderately agree

3 = Indeterminate

2 = Moderately disagree

1 = Strongly disagree

XIII. Efficiency and effectiveness

1. Effectiveness. Our product or service could be offered on a greater scale if we were able to combine efforts with one or more organizations.
2. Quality. Our product or service could be offered at a higher quality if we were able to combine efforts with one or more organizations.
3. Cost. Our product or service could be offered at a lower cost if we were able to combine efforts with one or more organizations.
4. Resources. Our organization needs resources that we do not currently posses that could be accessed through other organizations.
5. Sustainability. Our product or service could be provided on a more sustainable basis if we were able to combine efforts with one or more organizations.

XIV. Personal fulfilment

1. Gratification. Other members of this organization and/or I would become much more involved in, have more control over, and/or be more satisfied with the work environment if our organization were to enter into some form of partnership with another organization.
2. Gratification. I believe that other members of this organization and/or I would find a partnership with one or more organizations a source of challenge, excitement, personal learning and/or professional development.

XV. Organizational culture

1. Decision-making. Our organization has a culture of collaborative decision-making that would support a partnership with one or more organizations.

Source: DFID (2003).

2.1.6 Preliminary partnership analysis

At the concept note stage, the approach may just involve identifying the capacities needed to achieve the objective and the potential partners who might supply these capacities. Some comment on particular benefits, strengths and weaknesses of potential partners may also be appropriate. An example of such an analysis is given in the following table.

Table. *Preliminary partnership analysis: ICIPE tsetse repellent evaluation project*

Capacity needed	Potential partners (name of instituitions)	Expected benefit strengths/weaknesses	Alternative supplies
independent evaluation, especially epidemiology and socio-economic expertise	ILRI	Confirms scientific credibility for critical technology evaluation + research design and biometrics - weak epidiomolgy capacity currently -animal health field research no longer clear priority according to ILRI's defined outputs	ARIs in the north, e.g. CIRAD
Provides technology, back-stops application	ICIPE	Confirms success of technology; endorses development of technology to a commercial product + Relevant scientific, technical expertise - Some disappointing previous partnership experiences	n/a
Independent evaluation especially implementation in the field	KARI-TRC	reinforces role as national agency responsible for trypanosomiasis research; enhances capacity for technology evaluation + Appropriately trained field technicians, infrastructure in proposed study area + long track record, relevant subject expertise ?? Financial management capacity	ILRI hires own field team VSF

2.2 Partnership initiation phase

2.2.1 Preliminary visioning exercise

Visioning exercises have been used to design and help achieve a desirable 'future'. Visioning is a collective exercise and, whilst it has predominantly been used for community and urban planning, the principles can be applied to many other situations.

For partnership management of research activities, it could be especially useful when different partners are likely to be doing a wide range of activities which could appear isolated.

Even if the grant application does not necessarily require it, it may be useful to use a log frame format to structure this visioning exercise. By asking participants to describe where they expect to be and what they see in 'x' years time, related to the activities they will be doing, the similarities and differences between the visions can be elicited. Where there is divergence, this can be discussed so that everyone agrees on the overarching goal and purpose of the proposed research activity.

Agreeing first on the goal and purpose provides criteria for deciding whether proposed objectives and activities are relevant to the project. This approach can help keep everyone honest if partners try to load in activities that do not contribute directly to the project purpose.

2.2.2 In-depth and participatory partnership analysis

A more in-depth partnership analysis is appropriate at the proposal development stage. This should be done together with all the partners; the process of conducting the analysis together can help to ensure

that everyone is 'reading from the same page'. The aim should be to clarify roles and expectations from each partner, using a similar framework of capacities needed to achieve the objectives.

One possible approach would be as follows:

1. Agree on the main types of capacity needed.
2. Each partner then identifies their contribution, perhaps ranking it as 'major' or 'minor'.
3. Each partner lists their expected benefits by participating in the project. This should be expressed in terms of the output or output target the activity will contribute to.
4. Each partner characterizes for itself and each of the other partners their perceived strengths and weaknesses vis-à-vis implementing the research activity.

Outputs might take the form of the following tables:

Table. *Capacity*

Capacity needed	Partners who can contribute	Proposed role and ability to contribute

Table. *Motivation and strengths/weaknesses*

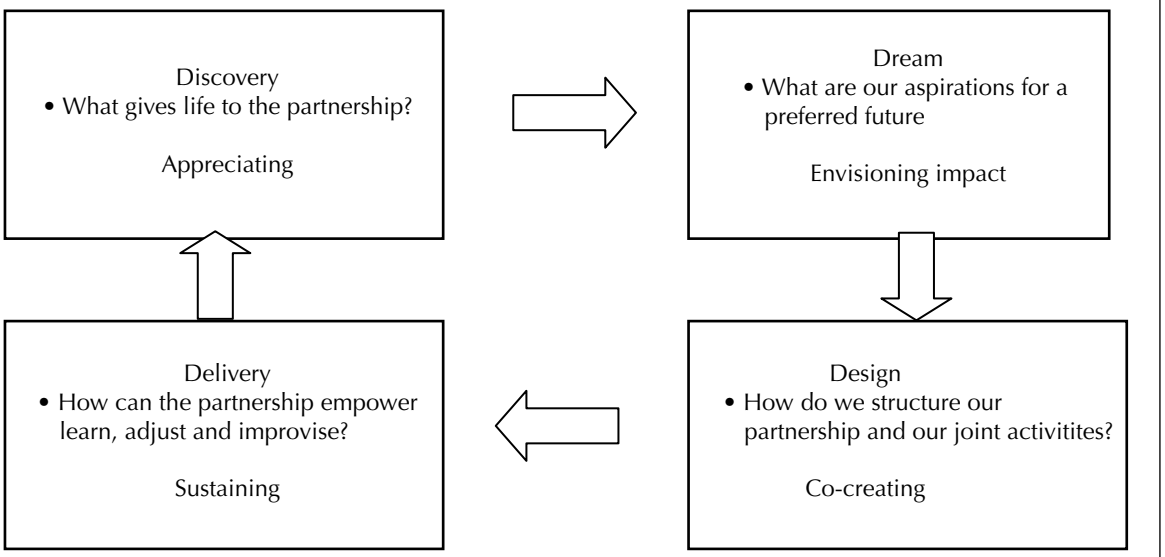
Partners (name of institution)	Expected benefit (motivation)	Strengths Weaknesses

In some cases, donor applications have a specific section requesting information on partner capacities and roles; the results of this exercise can serve as the basis for that section. Other approaches and frameworks could be used to achieve the same objective, or in addition to this simple partnership analysis. One such is a 'resource mapping' approach, which may be especially appropriate for large proposals involving a range of different actors bringing different resources.

2.2.3 Appreciative inquiry

The power of AI lies in its ability to tap into the values, assets and strengths of organizations and using these as building blocks for discovering organizational 'best practices' and creating a shared vision, strategy and action plans across organizations.

Box 1: Appreciative inquiry model for building partnership



2.3 Partnership formation phase

2.3.1 Outcome mapping

Outcome mapping is a methodology for planning, monitoring and evaluating development initiatives that aim to bring about social change. The process of outcome mapping helps a project team or program to be specific about the actors, its targets, the changes it expects to see and the strategies it employs. Results are measured in terms of changes in behaviour; actions or relationships that can be influenced by the team or program. It enhances the team and program understanding of change process, improves the efficiency of achieving results and promotes realistic and accountable reporting.

The key terminologies/concepts used in outcome mapping are: Boundary partners, intentional design, outcome challenges and progress makers.

Boundary partners

Individuals, groups or organizations with which the program interacts directly and which the program hopes to influence

Intentional design

The planning stage, where a program reaches consensus on the macro-level changes it wants to influence and the strategies to be used.

Outcome challenge

Description of the ideal changes the program intends to influence in the behaviour, relationships, activities and/or actions of a boundary partner.

Program markers

A set of graduated indicators of changed behaviour of a boundary partner that focus on the depth or quality of change.

This is a tool that assists program teams to learn from and to report realistically on their achievements by tracking the connections between what they do and what happens.

Outcome mapping focuses on change process and outcomes. It defines the limits of the programs' influence, promotes strategies that are appropriate to the context and recognizes the potential contributions of other actors. Development results (or outcomes) are measured as changes in behaviour and relationships of actors with which the program interacts directly. Performance is assessed as the programs' contribution to influencing those changes with outcome mapping; it is possible to develop and use indictors that facilitate comparison and leaning while retaining the relevant contextual details of the story at each site or in each case. Outcome mapping is especially useful in projects where success depends on behavioural change. Outcome mapping provides tools that help a development program to think holistically and strategically about how it intends to achieve results. Outcome mapping is usually initiated though a participatory process at a design workshop led by internal or external facilitator who is familiar with the methodology.

It is useful to include boundary partners in the initial workshop for their input on the relevance, activities and direction of the program.

The entire approach is a three-stage 12 steps process as shown in Figure 2. The three stages are intentional design, outcome and performance monitoring and evaluation planning. These stages are discussed below:

Intentional design

The four basic questions to be asked at the intentional design stage are:

Why? — Vision statement

How? — Mission, strategy maps, organizational practices

Who? — Boundary partners

What? — Outcome challenges, progress markers

Helps the team to clarify and reach consensus on the macro-level changes they would like to support and to plan appropriate strategies. The long-term goals provide reference points to guide strategy formulation and action plans (rather than acting as performance indicators). Progress markers which are used to track performance are developed for each boundary partners.

Outcome and performance monitoring

This provides a framework for monitoring actions and boundary partners' progress towards outcome/ goals. The three data collection tools that can be used in this process are:

a. an outcome journal monitors boundary partners actions and relationship
b. a strategy journal monitors strategies and activities
c. a performance journal monitors the organizational practice that keeps the program relevant and viable.

These tools provide workplace and processes and help the team reflect on the data they have collected and how it can be used to improve performance. Select only the information that they can afford to collect.

Evaluation planning

Helps the team set priorities so they can target evaluation resources and activities where they will be most useful. This stage outlines the main elements of the evaluations to be conducted.

'Outcome mapping' and 'result-based management' are compatible and outcome mapping can contribute important elements to results-based management; such as supporting stakeholder learning in relation to the management of the program, fostering social communication as a basis for interactive participation, and strengthening local organizations and institutions.

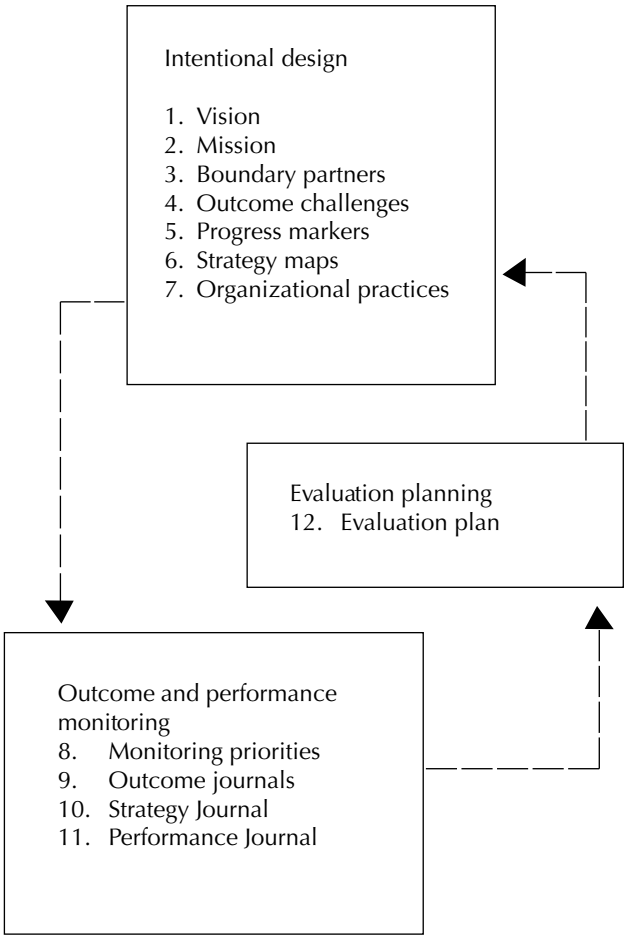


Figure 2. *The three stages and twelve steps of outcome mapping.*

2.3.2 Logical framework analysis

The logical framework approach (LFA) is analytical, presentational and project management tool that has evolved since the 1970s as a methodology for improving the systematic design, planning and management of development projects. More specifically, it can help project designers and managers to:

- Analyse the existing situation during project preparation
- Establish a logical hierarchy of means by which objectives will be reached
- Identify some of the potential risks
- Establish how outputs and outcomes might best be monitored and evaluated
- Present a summary of the project in a standard format.

LFA involves situation analysis (including stakeholder, problem and opportunity analysis), establishing an objective hierarchy and selecting a preferred implementation strategy. The product of LFA is a 'logical framework matrix', summarizing what a project intends to do and how, what the key assumptions are, and how outputs and outcomes will be monitored and evaluated.

Overtime, LFA has evolved from simply a framework for structuring project objectives to more sophisticated, process-orientated approaches for involving stakeholders in project design and management and establishing a 'result'-based monitoring and evaluation system.

The horizontal logic of the logical framework matrix includes objectively verifiable indicators (OVI); means of verification (MOV) and key assumptions. The vertical logic includes inputs (resources) and activities; outputs, purpose and goal. In essence the logical framework matrix summarizes the details of the interventions in one page as follows:

- What is the goal of the project?
- What is the purpose of the project?
- How does the project contribute to the objectives? (Intermediate results)
- What will the project do? (Activities)
- Which important external factors will determine the success or failure of the project? (Assumption)
- What measures do we use to assess success? (Objectively verifiable indicator)
- Where can we find the date/information needed to evaluate the project? (Means of verification)
- What resources/inputs activities are involved in the project?

The strengths of LFA include:

- During initial stages, LFA can be used to test project ideas and concepts for relevance and usefulness;
- When designing a project, a logical framework matrix can help to make comprehensive plans that are feasible within acceptable levels of risks;
- Logical framework matrices can form the basis of 'contracts' with explicit statements of what will be delivered;
- During implementation, the logical framework matrix serves as the main reference for drawing up detailed work plans, terms of reference, budgets etc.;
- A logical framework matrix includes indicators against which the project progress and achievements can be assessed.
- Enable project implementers to design and manage an M&E system. It also facilitates the subsequent *ex-post* evaluation and impact assessment.

Weaknesses include:

- Focusing too much on problems rather than opportunities and vision;
- When used too rigidly, leading people into a 'blueprint' approach to project design;
- Limited attention to problems of uncertainty, where a learning or adaptive approach to project design and management is required; and
- A tendency for poorly-thought-through sets of activities and objectives to be entered into a table, giving the appearance of a logical framework matrix when in fact the key elements of the analytical process have been skipped.

Provided that it is not used too rigidly and due attention is given to stakeholder participation, however, LFA remains a valuable and widely accepted tool for project planning and management.

Logical framework approach: procedure

Key steps in the logical framework approach are:

1. Establish the general scope and focus of the project;
2. Agree on the specific planning framework, terminology and design process;
3. Undertake a detailed situation analysis;
4. Develop the project strategy (objective hierarchy, implementation arrangements and resources);
5. Identify and analyse the assumptions and risks for the chosen strategies and modify the project design if assumptions are incorrect or risks are too high;
6. Develop a monitoring and evaluation framework.

The logical framework approach involves problem analysis, stakeholder analysis, objectives tree, objectives hierarchy and selecting a preferred implementation strategy. The product of this analytical approach is a logical framework matrix, which summarizes what the project intends to do and how, what the key assumptions are, and how outputs and outcomes will be monitored and evaluated.

2.3.3 Strengths, weaknesses, opportunities, threats (SWOT) analysis

Introduction

The SWOT is an acronym for strengths, weaknesses, opportunities, and threats.

A SWOT analysis is a tool used to understand the strengths, weaknesses, opportunities, and threats involved in a project or an organization or initiative. It involves identifying project, organization or initiative and list the favourable or unfavourable condition facing it. The tool is often used as part of a planning process, but can be useful in understanding an organization or situation and decision-making process for all sorts of situations.

The model

A SWOT analysis process generates information that is helpful in matching an organization or group's goals, programs, and capacities to the social environment in which it operates. The 'SWOT' itself is only a data capture exercise—the analysis follows later.

- Strengths: positive tangible and intangible attributes, internal to an organization and within the organization's control.
- Weaknesses: internal factors within an organization's control that hinder the organization's ability to attain the desired goal. These could be areas that organization needs to improve?

- Opportunities: external attractive factors that represent the reason for an organization to exist and develop. What opportunities exist in the environment, which will propel the organization? Identify them by their 'time frames'.
- Threats: external factors beyond the organization's control which could place the organization mission or operation at risk. The organization may benefit by having contingency plans to address them if they should occur. Classify them by their severity and probability of occurrence.

The strengths and weaknesses are inherent value-creating skills or assets, or the lack of, relative to competitive forces. Opportunities and threats are external factors which do not exist in the organization, but emerge as a result of the competitive dynamics caused by future gaps in the market.

	Internal factors		
Positive factors	Strengths Opportunities External factors	Weaknesses Threats	Negative or potential to be negative

The process

Doing a SWOT analysis can be very straight forward, but its strengths lie in its flexibility and experienced application.

- Decide how the information is to be collected and by whom (often a team approach is much more powerful than one person's view)
- Identify appropriate sources of information
- Gather the information—it is useful to use a template as the basis for exploring the factors and recording the information
- Plot the findings
- Identify the most important issues
- Identify strategic options
- Write a report
- Disseminate the findings
- Decide which activities are a priority in the context of the organizations goals and values. Look at the factors identified—where they appear in more than one area, use the table below as an action agenda.

	Strengths	Weaknesses
Opportunities	Make the most of these	Watch competition closely
Threats	Restore strengths	Strategic turn around required

Adapted from CIPD (2008). SWOT analysis. http://www.cipd.co.uk/absite/tandc.htm#con.

3 Tools for partnership implementation

3.1 Partnership self assessment inventory

This is a tool to get feedback on the partnership's strengths and weaknesses. The results should be shared during a discussion in which members discuss the information and explore ways to improve

weaknesses. Both in new as well as established partnerships, members can identify elements of weaknesses, and focus attention on these areas for future improvement.

Partnerships are complex relationships that require deliberate formation and maintenance. Research shows there are predictable characteristics or elements found in successful partnerships. By focusing on these elements in the beginning, new partnerships can 'get started' faster and with less difficulty. Existing partnerships can assess whether they have overlooked any of these elements which might be contributing to current difficulties. Either way, new or established partnerships can take a moment, reflect on which of these elements are strengths, and identify through this self assessment inventory where to focus attention for future improvement.

It is suggested that this self-assessment inventory be used as a means for all members to provide feedback on the partnership's strengths and weaknesses. The results of the inventory should be shared during a facilitated discussion where members can discuss the information and explore ways of improving targeted areas. Please note that this inventory is intended to help partnerships prioritize their limited time and resources by acknowledging where they are doing well and by targeting selected areas for improvement.

Remember this is not an evaluation of the partnership's capacity. This is feedback that will help focus the partnership's attention and energy to increase effectiveness in areas that are not current strengths.

Use the following 7-point rating scale to indicate your partnership's current level of skill and effectiveness.

1 = We need to focus on this immediately

2 = We will need to focus on this in the next couple of months

3 = We need to get better at this, but it is not our priority

4 = We are doing this inconsistently

5 = We are doing this with regularity

6 = We are doing this well, to an advanced level

7 = We do this in an exemplary way and can be used as a 'best practice' or model to others

N/A = Not seen in action or not observed.

Partnership self-assessment inventory

(Circle one)	Compelling vision
1—2—3—4—5—6—7—N/A	1. The partnership has a clear and compelling vision that is exciting, worthy of the combined efforts, and will have impact.
1—2—3—4—5—6—7—N/A	2. It is clear how these organizations can create the value added impact desired from the partnership and the role of each member.
1—2—3—4—5—6—7—N/A	3. Members can articulate partnership goals and how each parent organization contributes to achieving that goal.
1—2—3—4—5—6—7—N/A	4. The vision is used as a reference point in prioritization of activities and resources and keeping the partnership on track.
	Strong and shared leadership
1—2—3—4—5—6—7—N/A	1. Members share leadership where appropriate, not overly relying on any one person for all of the leadership functions.
1—2—3—4—5—6—7—N/A	2. Leadership is facilitative rather than directive, involving members in decisions, problem solving, and planning.
1—2—3—4—5—6—7—N/A	3. Members are willing and supportive followers, contributing to planning. Problem solving and assisting the leader in other ways.
1—2—3—4—5—6—7—N/A	4. Members use both successes and mistakes as learning opportunities to increase skills in analysis and future decision-making.
	Shared problem definition
1—2—3—4—5—6—7—N/A	1. All partners participate in the definition of the problem being addressed.
1—2—3—4—5—6—7—N/A	2. Members can articulate others' concerns and/or interests in the problem being addressed.
1—2—3—4—5—6—7—N/A	3. Members have and use a common approach or framework for addressing the problem.
1—2—3—4—5—6—7—N/A	4. Partnership meetings are held with the frequency required to ensure full communication, adequate problem solving, and efficient progress towards project goals.
	Interdependency and complementarity
1—2—3—4—5—6—7—N/A	1. Partnership uses and respects the diverse skills, knowledge and backgrounds of its members.
1—2—3—4—5—6—7—N/A	2. Partnership can create new value—something that individual members could not achieve on their own.
1—2—3—4—5—6—7—N/A	3. Members believe that each member's contribution is essential for the total outcome of the partnership goal.
1—2—3—4—5—6—7—N/A	4. Members and/or their parent organizations have the skills necessary to achieve the partnership goal.
	Mutual accountability
1—2—3—4—5—6—7—N/A	1. Members share a sense of responsibility for partnership results, not just the results for which they are individually responsible.
1—2—3—4—5—6—7—N/A	2. Members have agreed upon norms and processes for holding each other accountable.
1—2—3—4—5—6—7—N/A	3. Partners pitch in and help others who are experiencing problems or needing assistance to meet deadlines or outputs.
1—2—3—4—5—6—7—N/A	4. Members give timely and specific feedback to each other when appropriate.

	Attention to process
1—2—3—4—5—6—7—N/A	1. Members respond to feedback and criticism without getting defensive.
1—2—3—4—5—6—7—N/A	2. Members express ideas openly and honestly without irritating others.
1—2—3—4—5—6—7—N/A	3. Members monitor that all voices are heard before decisions are made.
1—2—3—4—5—6—7—N/A	4. Partnership has agreements for how it will work together and these are used and periodically checked for consistency of use.
	Communication
1—2—3—4—5—6—7—N/A	1. Members keep other partners appropriately informed about work, contacts, problems, accomplishments, and progress.
1—2—3—4—5—6—7—N/A	2. In partnership discussions, members emphasize the open, inclusive and respectful sharing of thoughts and ideas.
1—2—3—4—5—6—7—N/A	3. Members deal openly and constructively with problems and conflict not allowing these to hinder the partnership's performance.
1—2—3—4—5—6—7—N/A	4. Members keep their parent organization informed about partnership activities, challenges and progress.
	Decision-making/power equity
1—2—3—4—5—6—7—N/A	1. The decision-making process is clear and transparent to all members.
1—2—3—4—5—6—7—N/A	2. Members can provide input and have equal opportunity to influence decisions and the direction of the partnership's strategy.
1—2—3—4—5—6—7—N/A	3. Resource allocation within the partnership is transparent and in line with principles agreed upon by the partnership.
1—2—3—4—5—6—7—N/A	4. Decisions are recorded and shared with all those involved or affected by the decisions.
	Trust
1—2—3—4—5—6—7—N/A	1. Members share and act according to agreed upon values regarding the expected output of the partnership and the processes for carrying out the work.
1—2—3—4—5—6—7—N/A	2. Members deliver on promises and commitments made.
1—2—3—4—5—6—7—N/A	3. Members are direct about organizational interests and expectations, keeping covert or hidden agendas to a minimum.
1—2—3—4—5—6—7—N/A	4. Members are willing to compromise or make organizational sacrifices of self-interest so that the needs of other partners are met.
	Credit
1—2—3—4—5—6—7—N/A	1. Partnership has explicit agreements on how to handle visibility, authorship and intellectual property of individual members and the partnership.
1—2—3—4—5—6—7—N/A	2. Members recognize contributions to the partnership by individuals and their organizations.
1—2—3—4—5—6—7—N/A	3. Members share responsibility to ensure parent organizations demonstrate commitment to broader partnership goals.
1—2—3—4—5—6—7—N/A	4. Members are watchful for opportunities to acknowledge others for their contributions.

Scoring your questionnaire responses

After completing your ratings, transfer the points for each question to the appropriate box below.

Elements	Q1	Q2	Q3	Q4	Total
Compelling vision					
Strong and shared leadership					
Shared problem definition and approach					
Interdependency and complementarity					
Mutual accountability					
Attention to process					
Communication					
Decision-making and power equity					
Trust and commitment					
Credit and recognition					

Interpreting your questionnaire responses

Based on your ratings, which two elements are the strongest for your partnership?

1.

2.

Which two elements need improvement?

1.

2.

What specific changes/actions would improve these areas?

Share your assessment with others in your partnership for a collective look at the strengths and needed improvements

4 Tools for partnership monitoring and evaluation

4.1 After action review (AAR)

This is a participatory tool that facilitates collective learning by talking, thinking, sharing and capturing the lessons learned with partnerships (CIDA 2002).

This tool is used within a small group; it creates a climate of confidence as it focuses on constructive feedback, explicitly recognizes positive contributions and things that are working well and that people are proud to share with others. AAR uses the following six questions:

1. What was supposed to happen? Why?
2. What actually happened? Why?
3. What is the difference? Why?
4. What went well? Why?
5. What could have gone better? Why?
6. What lessons can we learn?

These questions provide the opportunity to evaluate what works, how and why, but also to induce a process of collective learning and sharing empirical examples and experiences with partnerships, and to examine the critical factors that may have contributed to success or difficulties in partnerships.

4.2 Action–reflection

Action reflection is a model that helps a program project or partnership to continuously improve based on the observation of the action of the planned program. The main idea behind the use of action–reflection is to learn from the experiences. Since the changing contexts affect some of the operations, it is expected that the partnership moves with a contingency plan to adjust to a changing situation. As a learning process, partners should take into account both internal and external contexts. The planned partnerships sometimes get affected by internal factors such as unwillingness of partners to carry out

the planned activities, dropping out from the partnership due to change in occupation and project phase out. They could also be affected by external factors. The partnership has to be made flexible and proactive to make adjustment according to situation. It is important to critically note what is working and what is not. This information serves as an input for the next step planning. This continuous process of planning–putting into action–receiving reflection/feedback—revising plan—putting again to practice (action)—helps partnerships to move around the problems-solving orbit.

4.3 Impact chain

The typical impact chain starts from the set of inputs and activities of a project/program to the most highly aggregated development results, such as poverty reduction, food security, environmental protection etc. The chain also specifies all the main intermediate steps: the activities of a project, the output, the use that others make of this output, the direct as well as possible indirect effects, and the implications of the use of these outputs on the ultimate beneficiaries—the society. The output, outcome, and impact that are generally sequentially produced over a period of time become more difficult to articulate, measure, and attribute as one moves from outputs to impact.

Collaborative activities are the joint actions undertaken by the collaborators, for example a training workshop. Here you are expected to identify all collaborative activities in the country by listing activities, key collaborators, as well as the contributions of each group. Clearly state the objectives of the collaborative activities.

The term output refers to the results of the program activities, i.e. goods and services produced by the set of collaborative activities. In the case of training activities, the outcomes may be trained individuals with acquired skills (are able to apply the skills taught), a set of training materials, and/or trained trainers.

Immediate outcome refers to the first level effect of the outputs: the observed or documented behavioural changes in those directly affected by program. In the case of training program, how did the training affect the behaviour of the trainee? Did (s)he make any changes in the way of doing business as a result of the training? Did (s)he apply the skills acquired? In the case of research the first immediate outcome may be a change in the recommendations provided by the extension staff or even the behavioural change to use the direct product, i.e. adoption.

Intermediate outcomes are the benefits and changes resulting from the application of the output. In order to bring about an outcome, the program has to change people's behaviour. By trying to identify and then document the changes in attitudes, knowledge, perceptions, and decisions taken by program target groups, which logically link to the outcomes being observed, we can often acquire a good understanding of the actual impact that the program has. Often, immediate and intermediate outcomes can be measured and documented directly. This requires clearly identifying the various clients of the program and the way in which their behaviour is expected to change. If an expected outcome has been observed after the program activity has started up, then this suggests that the program is having an effect. If we can observe these short-term changes, then the logical case for the program's attributions can be enhanced.

Outcomes are measures of the use that is made of the output by clients and partners. They reflect the value they place on them as intermediate product, which in turn are input in their management decision-making.

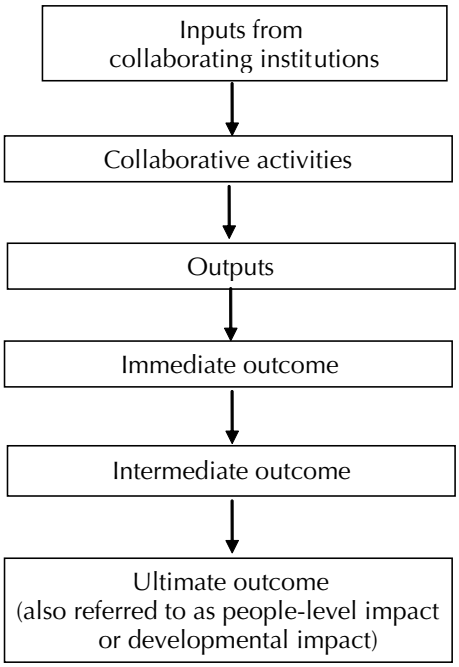


Figure 1. *Impact chain.*

The term ultimate outcome (impact) refers to measurable effects of the outputs and outcomes on the wellbeing of the ultimate beneficiaries of the R&D efforts, namely the poor, the food and nutrition insecure, and the environment. Most socio-economic impacts and developmental impacts fall under this category. Very often the ultimate outcomes are closely linked to the sectoral/regional/national developmental goals.

4.4 User surveys

The most common method for assessing the economic and social benefits of R&D involves the use of surveys of the primary intended users of the research results. There are two basic types of such surveys:

- Client surveys: Surveys in which the respondents are involved with the research organizations in research collaboration or some other form of active interaction; and
- Beneficiary surveys: Surveys in which beneficiaries are selected to be a representative sample of the broader group of primary intended users of the research results.

These surveys are sometimes structured in such a way that the direct clients are a certain percentage of the total sample of primary intended users.

At times, it is necessary to use experts rather than users to review some of the research activities. This may be the case in situations where the primary intended users are not sufficiently familiar with research to be able to answer questions.

Advantages of user surveys

User surveys provide a more systematic review by using standardized interviews and questionnaires and gathering the views of a wider number of people, thereby overcoming the restrictions involved in using a modified peer review procedure with a limited number of participants. Quantitative indices can be formed if the questions are amenable to scoring, thereby providing concurrent method of making comparisons among R&D projects.

Disadvantages of user surveys

The major disadvantage to user surveys is the problem of 'grateful testimony,' i.e. the possibility that the clients and users may be more positive about the relevance and usefulness of the R&D than is warranted. In addition, often there is difficulty in interpreting the results.

Handling 'grateful testimony'

There are several ways to handle the problem of 'grateful testimony' when implementing user surveys. Several of these are:

- Pose a large number of questions of different types, all dealing with different aspects of client relevance and usefulness. These questions could be related to the interest of the client in the research area, indicators of the value of the R&D to the organization and the indicators of the importance of the R&D to the client organization;
- Gathering more specific information on associated benefits is to ask the (potential) clients or users to describe, in very specific terms, the details of the use (or potential use) of the R&D and its related social and economic benefits;
- Conduct follow-up interviews with a subset of the (potential) clients/users surveyed to test the veracity of their answers by probing for additional details which generally reveals how honest they have been; and
- Validity also can be assessed in *ex-post* and ongoing reviews by comparing them with other primary and secondary data relating to the relevance and usefulness of the R&D activity.

Issues addressed in user surveys

Issues that need to be addressed in user surveys are:

- Which type of user survey to implement
- How to identify the users
- How to structure the survey sample
- When to use experts instead of users
- How to ensure the validity of the results and
- How to interpret the results.

Other user survey issues

In developing questionnaires and interview guides, one has to be careful to standardize questions in a manner that facilitates analysis, but does not place undue constraints on the amount of information that can be obtained, thereby resulting in the collection of trivial information. The individuals involved in developing the interview guides or questionnaires must have a clear understanding of the nature of the R&D activity being assessed.

Suitability of user surveys

User surveys are most useful for past R&D and ongoing R&D. The method is useful for assessing the impacts associated with R&D activities near the applied and development end of the R&D spectrum. In most cases, user surveys are often combined with some other method.

4.5 Benefit–cost methods

The theoretical underpinning of these approaches is found in the economist's concepts of supply, demand, consumer surplus, alternative costs, and willingness to pay. This form of analysis seeks to assess private and public investments in R&D in terms of both the economic and social benefits generated for society by the investment as well as the economic and social costs incurred by society to execute the project. Benefit–cost analysis provides a strong theoretical framework for analysing the economic and social impacts of R&D activities. It is always carried out on a project-by-project basis, and it attempts to assess the project in terms of both the economic and social benefits generated for society, as well as the economic and social costs incurred by the society to execute the project. The net benefits of the projects are then calculated as follows:

Net benefit = Gross benefit (economic, social)—Costs (economic, social)

There are several variants of cost benefit measures:

- Net present value
- Benefit–cost ratio
- Pay-back period and
- Rate of return calculations.

All these essentially involve the same techniques.

Costs

There are three types of costs associated with R&D projects that should be included in the analysis:

- Cost of generating the research results
- Cost of introducing and supplying the results to the end users and
- Cost incurred by the end users to implement the results
- Transaction costs.

Each of these categories of cost needs to be identified and included into the analysis. Any additional cost to the society also needs to be included. In terms of the costs of the R&D activity, they are calculated as 'opportunity' costs, which represents the value of the goods and services that society forgoes when resources are transferred from one occupation to another. It is assumed that under this methodology, that society's land, labour and capital resources are approximately fully employed. Hence, they can only be utilized on a new R&D project if they are withdrawn from their alternative areas of employment.

Benefits of R&D

The benefits which result from the new or improved product, processes or systems which result from the research are valued at the price society is willing to pay for them. These benefits include:

- Those for which prices are paid
- Benefits associated with increased educational and training opportunities
- Reduced environmental damage and
- Improvement in health and safety.

It is worth noting that in many cases it may not be possible to associate an explicit value with such benefits. Many of the research benefits are intangible and existing valuation techniques do not readily apply.

In *ex ante* analysis, in addition to costs and benefits, the probabilities associated with the realization of these costs and benefits must be determined. The time sequence of the relevant costs and benefits must also be determined. The (expected) value streams of annual costs and benefits must be discounted to their present value in order to estimate the net benefit of the project.

The calculations must be based on incremental benefits and costs, i.e. the difference between the 'with' and 'without' scenario (those costs and benefits, which would not have occurred in the absence of the R&D project). It is often very difficult to meet this requirement because many social and economic benefits result from a combination of complementary R&D investments, incurred over substantial period of time and it is often not possible to isolate the influence of a specific R&D project.

Benefit–cost analysis is technically demanding and time consuming. However, the main value of benefit–cost analysis in R&D impact assessment is that it offers a systematic framework for identifying the costs, benefits and wider implications of R&D.

Suitability of the benefit–cost method

Benefit–cost methods are much more appropriate for past research than for ongoing or future research. The benefit cost method is very useful for assessing applied research dealing with a product/process development. In the past, studies have focused on 'big winners.'

Benefit–cost methods can be used for *ex ante* analysis of R&D within those sectors where the connection between R&D and sectoral impacts are clearer and more direct, such as agriculture. In order to use it in ongoing or future research, one must have:

- A good idea of the likely outcomes or R&D
- Their probability of occurrence
- When they will occur
- Who and when they will be applied and
- The market for products or processes developed.

4.6 Cost-effectiveness analysis

Cost-effectiveness analysis is a particular type of benefit–cost analysis in which the objective is to compare costs of two different means of generating the same information or end product. Basically, it is a simple approach that compares the technical efficiency and cost of alternative methods to accomplish a given task, exogenously defined as required. This approach is most useful when one is evaluating two systems which yield comparative similar outputs. The basic steps in cost-effectiveness analysis are:

- Define the objectives that must be attained
- Identify the alternative methods of achieving the objectives or obtaining the output
- Determine the costs of these various alternatives and
- Compare the cost and rank them.

Advantages of cost-effectiveness analysis

The primary advantage of the cost-effectiveness method is that one does not need any benefit information.

Shortcomings of cost-effectiveness analysis

The major shortcomings of the cost-effectiveness approach are:

- There is nothing to prove that any of the alternatives compared can yield benefits over and above costs. This is why cost-effectiveness analysis is only justifiable in situations where one system is certain to be undertaken in the absence of the other; and
- The products/outcomes of the alternatives must be virtually identical in terms of output if the magnitude of the cost saving is to be representative of the net social benefit. If one of the alternatives costs less, but produces a lower quality product and/or has a different impact, then the computation of benefits becomes much more complicated. Lower cost will create a positive social benefit, but the lower quality will yield a disbenefit, that is, the willingness to pay will decline.

4.7 Partnership assessment tools (PAT)

(Tools for assessing the performance and impacts of partnerships)

This tool was jointly developed by four UN entities—the UN Development Program, the UN Office for Partnerships, the UN Institute for Training and Research and the UN Global Compact to assess the sustainability and impacts of partnerships. It is a simple automated assessment tool that leads users through a series of close ended questions.

This tool (PAT) can measure the level of various elements of sustainability of partnership for development and it can contribute to:

- Informed decision-making
- Establishing partners to better capitalize on opportunities to add value to partnership projects
- Systematically articulating and communicating the value of partnership projects
- Focusing on the long-term economic, environmental and social impacts of partnerships
- Aligning and clarifying objectives and responsibilities
- Creating and designing successful partnership projects with positive development impact (UN 2007)
- Risk of facing unforeseen problems is significantly reduced.

Purpose: The tool provides a process by which partners can assess the expected value of a prospective partnership and identify ways to improve future partnership activities. The tool can be applied to a wide range of partnerships.

When to use?

Use PAT after project planning is complete but before the project is launched.

Note: The most important part of a partnership is understanding the added value of the partners. Risk associated with the partnership is a challenge that deserves more detailed coverage in the tool.

For more details see globalcompact@un.org.

5 Other relevant participatory methods/tools

5.1 Interviews

Interviews are among the most commonly used technique in agricultural R4D to obtain required information. The interviews can take the form of individual interviews, key informant interviews, community interviews, focus group interviews etc. This section presents different types of interview techniques a researcher can use.

Individual interviews

Structured individual interviews are often used in formal household surveys to collect data from randomly selected rural households. Although informal surveys can provide a lot of information in a relatively short period, there may be a further need for more specific information and quantitative data. Under these circumstances, a follow-up formal survey may be appropriate.

A survey uses a sequence of focused, predetermined questions in a fixed order, often with predetermined, limited options for responses. Surveys can add value when they are used to identify development problems or objectives, narrow the focus or clarify the objectives of a project or policy, plan strategies for implementation, and monitor or evaluate participation. It is important to keep in mind that this formal/verification survey is different from the traditional farm management survey. The distinguishing characteristics of a formal survey are:

- Uses standardised or structured questionnaire
- Collects uniform set of data
- Engages, as much as possible, a random sample of farmers to collect information
- Enumerators are often used to administer the survey and
- Carries out problem-focused verification.

Since the formal survey collects standard information from a sample of farmers, it enables statistical analysis of information collected to draw inference and conclusion about the population. Formal surveys are recommended in one of the following cases:

- When quantitative data are required to complement qualitative data obtained form RRAs/PRAs;
- When detailed information on individuals or households is sought rather than general information on target group;
- To compare before/after situations and the changes in farmers' conditions over time (baseline and adoption studies);
- To conduct in-depth studies of specific subjects and to test hypotheses that have emanated from informal surveys.

The interview schedule/questionnaire are structured and standardized in such away that the data to be collected meets the objectives of a researcher and the way the researcher would like to analyse the data. Such an approach to data collection and analysis is common, particularly in quantitative research (positivist paradigm), and the dataset is more amenable to statistical manipulation.

Semi-structured interview

These are also called *conversational interviews,* interviews that are partially structured by a flexible interview guide with a limited number of preset questions. This kind of open-ended guide ensures that

the interview remains focused on the development issue at hand while allowing enough conversation so that participants can introduce and discuss topics that are relevant to them. These tools are a deliberate departure from survey-type interviews with lengthy, standardized questionnaires.

Using a guide or a checklist, a multidisciplinary team poses open-ended questions and probes topics as they arise. The output is usually in the form of qualitative information, but can also be quantitative. The steps to follow in a semi-structured interview are summarised in Box 5.1. There can be sequencing and a chain of semi-structured interviews, which can be repeated as and when required. Semi-structured interviews can be conducted with different groups in a village or community.

Box 5.1 Semi-structured interview—steps to follow

Before survey

- Select the multidisciplinary survey team
- Analyse secondary data
- Prepare checklist for the interview (this should be a team exercise)
- Prepare the logistics for the survey
- Inform farmers in advance
- Establish note taking procedure before entering the village and
- Decide whether group discussion and/or individual in-depth interviews are more appropriate.

During a group meeting or individual interview

- Introduce yourself and the purpose
- Be aware of the local culture and language
- Respect farmers as equal partners
- Do not use checklist as a questionnaire—use it as a means to stimulate discussion
- Build questions to be asked around a list of sub-topics
- Use guidelines for probing: who? Why? What? When? Where and How?
- Take notes during the interview but not excessively.

After the interview

- Finish the discussion politely
- Make sure to thank the respondents, mention the follow-up
- At the end of the day have a brainstorming session, complete notes and prepare for the following day's work
- Establish report writing procedures as well as responsibilities among team members.

Community interview/group interview

At times, in community development oriented activities, one useful tool that can be used is a community interview. The objectives of this type of interview are:

- To gather descriptive data on community and village
- To assess community needs/problems and priorities and
- To assess the attitude/commitment of the community with respect to planned intervention.

Advantages of community interviews are:

- It permits interaction with large group of people within a short period of time, i.e. it is efficient in terms of cost and time;
- In a non-threatening environment, participants tend to complement/correct/verify each others' input, thus improving the quality of the information collected.

However, there are a number of limitations to this approach. They include:

- Local leaders and powerful community members may dominate the deliberations
- Group may not be homogenous and
- Facilitator should have considerable practical knowledge about the problem/issue that needs to be explored.

Focus group interview/discussion

Focus group interview is another form of group interview that addresses specific topics/issues confronting a group. Typically 6–8 people under the minimum guidance of a facilitator discuss a particular topic in detail. When the ideas and opinions of people at the grass-root level are needed about a specific problem or intervention, then a focus group interview is the most appropriate technique to use. This type of discussion may reveal the perspective, attitude, understanding and reactions of beneficiaries/ local group.

The group interview is cost effective, can be carried out quickly, and can stimulate diverse thinking. The moderator of this exercise should not be biased, must possess good theoretical and practical knowledge of the problem/issue being discussed. (S)he should be fluent in the local language and should have previous experience in conducting focus group sessions.

The potential dangers are that the formal/informal leaders and influential individuals may dominate the discussions. If the issue under discussion is controversial and sensitive, then the group situation may inhibit rather than stimulate individuals' response. Focus groups are not intended to reach consensus, make decisions or agree on specific action.

5.2 Ranking and scoring

Ranking and scoring methods require informants to assess the relative importance of different items. Ranking usually involves placing items in order of importance (1st, 2nd, 3rd etc.) whereas scoring methods assign a value or a score to a specific item. This is usually done by using counters such as seeds or stones, nuts or beans to attribute a specific score to each item or indicator.

Proportional piling and scoring techniques can be used to assess the relationship between two or more given variables. For proportional piling, informants are asked to distribute one hundred counters amongst the different variables or indicators, with the largest number of counters being assigned to the most important indicator, and the smallest number of counters being assigned to the least important indicator.

Before and after scoring

'Before and after' tools are an adoption of scoring methods which enable a situation before a project to be compared with a situation during or after a project. Definitions of 'before,' 'after' or 'during' can be obtained from timelines which provide a useful reference for establishing agreement between the investigator and assessment participants on these different points in time. With 'before' and 'after' scoring, rather than simply scoring items against indicators, each score is further subdivided to give a score 'before' the project and a score 'now' or 'after' the project.

Specific methods in ranking include simple ranking, pair-wise ranking, matrix scoring and wealth and wellbeing ranking, among others.

Simple ranking

As the term implies, simple ranking involves asking participants to categorize or grade items in order of importance.

In this example, pastoralists were asked what benefits they derived from different livestock. They were then asked to rank them in terms of the overall benefits they provided. The exercise was done with both women and men's groups to ensure that any gendered differences were captured. In this example, the only variation was that women ranked sheep higher than goats as they fetched a higher market price. The men valued goats slightly higher than sheep as they are more resilient to drought.

Pair-wise ranking and matrix scoring

Matrix scoring is primarily used to compare several items against a set of different indicators. It involves three main stages—a pair-wise comparison followed by the scoring of items, and finally 'interviewing the matrix'.

It is a tool used to elicit the relative importance attached to a list of problems, solutions and technological options by farmers. Farmers' preferences and decision-making criteria can be learnt during the pair-wise ranking exercise with the help of probing questions. Preference ranking can be used to learn about differences in priority between social categories (men/women, young/old, rich/poor etc.). Table 5.1 gives example of matrix of criteria by which livestock keepers evaluate different species of forage crops.

Table 5.1 *Ranking of community livestock assets*

Women		Men	
Cattle	1st	Cattle	1st
Sheep	2nd	Goats	2nd
Goats	3rd	Sheep	3rd
Camels	4th	Camels	4th
Donkeys	5th	Donkeys	5th
Horses	6th	Horses	6th

Example of a ranking and matrix scoring of food source preferences

The following example describes how a pair-wise ranking and matrix scoring exercise was used to assess food source preferences in an integrated livelihoods project in Niger. The project had several components. These included re-stocking of small ruminants and the establishment of cereal banks, and vegetable gardens.

During a focus group discussion, participants identified their existing food sources as follows:

1. Own farm production (millet)
2. Vegetable production
3. Purchased food (excluding cereal bank)
4. Livestock production (milk and meat)
5. Cereal bank (millet) purchases.

They were asked to individually compare or rank each food source against each of the other food sources in terms of overall preference. The participants were asked to give reasons for their preferences. The name of the food source that ranked highest was then entered into the appropriate cell in the pair-wise matrix

Pair-wise ranking showing food source preferences

Food source	Millet	Vegetables	Purchases	Cereal Bank	Livestock
Millet (own production)		Millet	Millet	Millet	Millet
Vegetables (own production)			Vegetables	Vegetables	Vegetables
Purchases				Cereal bank	Purchases
Cereal bank					Cereal Bank
Livestock					

An overall preference score is then calculated by counting the number of times each food source was ranked highest and thus recorded in the matrix:

Score	
Rainfed cereal production	4
Vegetable production	3
Cereal banks	2
Purchases	1
Livestock	0

From these discussions, it transpired that the overall preference for millet from own production was largely attributed to the volume or quantity of food that is produced from this source. The assessment team also asked participants what sources provided the most nutritious or healthy foods as opposed to just the largest quantities. Based on the discussion during and after the exercise, the assessors and participants agreed on four broad categories of food preference indicators:

1. Availability (quantity/volume) 2. Accessibility (easy to come by/grow/cheap)

3. Income earning or savings potential 4. Nutritional/health value

Participants were then asked to score the five food sources against each of the four food preference indicators identified. This was done using visual aids to represent each food source. A millet stem was used to represent rain-fed millet production, a broad green leaf was used to represent vegetable production, a handful of coins was used to represent food purchases *(excluding cereal bank purchases)*, a bottle top was used to represent livestock production *(milk and meat),* and a small bag of groundnuts was used to represent cereal bank purchases. After carefully explaining what each visual aid symbolized, the assessors asked the participants to score each of the food sources against the first food preference indicator using fifty counters. The exercise was then repeated for each of the other three food preference indicators. The physical distribution of counters was done by one volunteer, but this was based on group consensus.

Matrix scoring of different sources against indicators of preference

	Millet	Vegetables	Purchases	Cereal bank	Livestock
Availability (quantity/volume)	15	12	5	13	5
Access (easy to come by)	22	8	3	13	4
Income earning and savings potential	12	13	0	8	17
Nutritional value	6	17	6	6	15
Total	55	50	14	40	41

Although livestock ranked lowest on the food source preferences during the pair-wise ranking exercise, against specific indicators such as income potential and nutritional value, it ranks much higher than some of the other food sources. Against the four indicator categories shown here, livestock comes out with the third highest overall score, illustrating how matrix scoring can be a valuable tool to measure against different indicators, and capture important information that otherwise may be overlooked.

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Annex 3 Complementary interests and the personal touch: An institutional history of sorghum–poultry coalition, Andhra Pradesh, India

Project title:

Exploring marketing opportunities through research, industry and user coalition: Sorghum poultry feed

[DFID-CPHP R8267 (ZB0337)]

3.1 Introduction

India is the second largest producer of sorghum in the world after USA with around 11 million hectares under its cultivation. Sorghum is grown in rainy season (June–October) and in post rainy season (September–January). The rainy season crop accounts for 37% of the total crop area and contributes 65% of the total production. The demand for rainy season sorghum grain for food use has declined over the years primarily due to increased production of rice and wheat and public policies that make them more accessible to the poor and low-income consumers. Thus, farmers are unable to sell surplus sorghum grain at remunerative prices. Further, the deterioration in the apparent and actual grain quality of rainy season sorghum due to grain mold leads to large fluctuations in price.

Small farmers with less than one-hectare land in the semi-arid regions grow sorghum. The lion's share of sorghum cultivation is under subsistence farming. Sorghum production underpins their livelihood strategy to meet the twin objectives of food and feed for livestock. However, after meeting their household demands, these farmers are unable to dispose off the marketable surplus due to lack of marketing networks to take advantage of the potential demand for sorghum in non-food uses. Rainy season sorghum is gaining momentum for use in poultry feed as a potential alternative to maize, whose production is not able to meet the present growing demand. In this context, enhancing the use of rainy-season sorghum in poultry feed rations and creation of sustainable marketing linkages between sorghum growers and poultry industry through innovative institutional systems assumes importance for ensuring sustainable supply to industry and assured incomes to poor sorghum growing farmers.

The demand for rainy-season sorghum grain as food has declined over the last decade, mainly due to the deterioration in the apparent and actual grain quality as a result of rain-induced molding, increasing production of fine cereals (primarily wheat and rice) and public policies that make the latter more accessible to the economically deprived.

3.2 Problem statement

Poultry in India developed significantly during last three decades. The annual growth rate of layer is 10% while that of broilers is 15%. This has placed enormous pressure on feed resources. Andhra Pradesh is the largest poultry producing state accounting for one-third of the egg and 18% of broiler production in India. Present requirement of total compounded poultry feed in the country is about 12 million tonnes per year. Maize (Zea mays L.) is the main cereal feed ingredient, which constitutes 30–35% of poultry ration.

The non-availability of cost-effective feed ingredients is a major factor inhibiting the growth of poultry industry. Maize gained importance in poultry field, but its low availability and high cost are dwindling the profits of poultry farming. Production of maize in India is estimated to be about 10 million tonnes per year. Poultry consumes 30% of it. To feed the anticipated poultry population by 2020, the requirement of maize will be 31 million tonnes from the present level of 3.5 million tonnes. In view of the shortage of maize and huge requirement of feed for poultry in the near future, it is necessary to develop alternative cereal feed ingredients such as sorghum.

Maize is the principal energy source in poultry feed. Sorghum is next important energy source and is often included in poultry diets as an alternate to maize. Variable performance of broilers on feeding sorghum is attributed mainly to the grain quality with respect to grain moulds, tannins and certain

fungal toxins. Some of the recent improved sorghum cultivars are known to be moderately resistant to grain moulds and free from tannins.

The limited inclusion of sorghum in poultry feed and its relative low status as a raw material is partly due to misconceptions surrounding the crop such as the level of tannins, mycotoxins in blackened sorghum grain, energy levels, problems in processing and lack of carotenoids for egg yolk pigmentation.

With this background, a project was conceived in a novel approach, i.e. coalition, making all the stakeholders as partners right from the stage of objectives formation.

3.3 Coalition approach—more than partnership

Coalition is the process in which distinct/independent entities/institutions/partners work together for the common goal with synergistic effect.

For a successful coalition, the partners need to have

- Common goal
- Clarity of roles and responsibilities
- Ability to articulate their problems and prospects
- Empathetic ability to fit themselves in broader objective
- Enthusiasm to work in groups and sharing the synergies

Background of sorghum poultry coalition

Sorghum poultry coalition grew out of a long-standing partnership between International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the private sector. ICRISAT played a nurturing role, often through informal networks, in the emerging private seed industry and relied on them in turn to ensure that the new material they developed reached farmers. The relationship progressed still further in 2000. ICRISAT signed an agreement with eight private sector seed companies to develop sorghum hybrids whereby each company makes a grant to ICRISAT and the scientists then make their results available to all the companies in the consortium. Thus the scene was set for a broader institutional coalition to promote marketing opportunities for sorghum farmers. ICRISAT sorghum breeders and economists were aware that this crop had great potential. There is also a large, and increasing, potential market demand for rainy season sorghum in animal feed, especially for poultry. Two previous DFID-funded projects (R7506 and R6687) identified this potential, and the two key constraints that appeared to be holding back the promotion of rainy season sorghum in poultry feed.

ICRISAT sorghum breeders and economists were aware that this crop had great potential. Production and consumption of sorghum has declined in the last thirty years but it remains important to poorer producers in mixed farming systems. It still represents half of the cereal consumption of 60 million people in the areas of AP, Maharasthra and Karnataka; it often underpins poorer farmers' livelihood strategies during low rainfall seasons; and sorghum stover makes up around 50% of animal diets. There is also a large, and increasing, potential market demand for rainy season sorghum in animal feed, especially for poultry. Two previous DFID-funded projects (R7506 and R6687) identified this potential, and the two key constraints that appeared to be holding back the promotion of rainy season sorghum in poultry feed:

1. Poultry producers assumed that tannin and mold affected the quality of rainy season sorghum which would in turn reduce the health of the birds[1]
2. The institutional[2] links between the different stakeholder organizations (science institutes, poultry feed manufacturers, poultry producers and sorghum growers) were weak.

Although these projects had established contact with the private sector, they were not working together as partners systematically, or from the outset of the initiatives, so the impact of these projects was limited.

Formation of the coalition: Shared and complementary objectives

In 2002, ICRISAT scientists with the help of a Special Project Scientist at ICRISAT seconded from Natural Resources Institute (UK), wrote a concept note about developing institutional linkages between different stakeholders in sorghum production and marketing. Scientists at ICRISAT were well aware of the institutional constraints that had held back previous projects. The careful selection of member organizations relied on both long experience and personal contacts. They did no invite the individuals that they knew into the new coalition, but rather these contacts allowed them to find out easily and quickly who would have appropriate expertise for the coalition within those organizations.

A list of eleven organizations were drawn that might take part in the sorghum coalition and then narrowed it down to four, in addition to ICRISAT, i.e. Acharya NG Ranga Agricultural University (ANGRAU), Federation of Farmers Associations (FFA), Andhra Pradesh Poultry Federation (APPF), Janaki Feeds. Personal knowledge of the individuals in the organization did not influence the choice of partners. But doors may have been more easily opened, and trust established more quickly, by use of these personal networks.

Each coalition member had his or her own reasons for joining. The ANGRAU poultry experts, and the ICRISAT seed breeders, were interested in forming links with farmers and feed manufacturers to improve the uptake of their research outputs and findings. Like most agricultural research institutes, in the past, both had relied heavily on academic publication to disseminate their work to other institutes and on other agencies to transfer findings to the end-users. They were anxious to work more closely with key stakeholder organizations from the outset of this new initiative to make sure that responsibility for all stages of the work—planning, innovation, dissemination—were jointly shared by all. This strategy, they felt, would maximize the impact on poverty reduction.

Sorghum farmers, represented by the FFA, saw the potential to increase the security of their livelihoods. In recent years, farmers had suffered repeated droughts and low prices for their produce. The coalition offered them opportunities to grow higher yielding sorghum, which is less risky crop than maize because it relies on less rain. If there is an average amount of rain, or a slight drought, sorghum will usually survive whereas maize may easily fail. (Paddy was not a choice for those poorer dryland farmers with no irrigation). Improved rainy season sorghum could provide both fodder for animals—which was of particular interest to women dairy farmers—as well as food for their own consumption. It could potentially be sold for industrial use as well. Since the latter relied upon convincing poultry feed manufacturers and poultry farmers that sorghum was as health for the birds just like maize, there was an element of risk. But enough farmers judged that this risk was lower than the prospect of growing crops that could be utterly ruined if the rains failed.

1. Ulrich Kleih et al. (2000).

2. Hall defined 'institutional' broadly to include the rules, norms and power structures within which individuals and organizations operate (2004, 1).

Initially the poultry feed manufacturers—Janaki Feeds—were skeptical about 100% replacement of maize with sorghum. They had already been replacing small amounts of maize with sorghum in poultry feed, partly because the latter was cheaper but also because maize was becoming scarce. They had not conducted scientific tests, and had doubts about the nutritional value of replacing large quantities of maize, so they kept the amounts relatively small. They attended the early meetings because an established contact with ICRISAT. They had a high opinion of the value of science, and of ICRISAT scientists in particular, because they had collaboratively developed a useful and cost-saving 'ELISA Kit' together for assessing mycotoxins in poultry feed. But it was only when they scrutinized the evidence that sorghum was as healthy as maize that they saw the business potential and participated fully in the project.

APPF saw the potential benefits to its members: if the farmers produced their own feed, then they would benefit from cheaper, more easily available sorghum. Or if they bought it from Janaki Feeds, or other feed manufacturers that followed suit, then they would spend less on purchasing feed than they would if they relied on maize for grain.

Project objectives

The main objective of this project is the creation of marketing opportunities by developing sustainable economic linkages in sorghum-poultry feed chain through innovative coalition systems.

The four outputs set for the project are:

3. Poultry feed formulations with sorghum cultivars available
4. Formation of a sustainable farmer scientist industry coalition
5. Technology access to the target groups accelerated and
6. Understanding coalition system as a process.

Setting the tone for shared vision

Scientists from ICRISAT took the initiative and convened a meeting with potential project partners October 2002. They discussed objectives and approach, agreeing to a shared overall goal—to improve the livelihood security of poorer farmers—as well as sub-goals that would meet the interests of each member organization. They developed a, 'feeling of win-win situation for all the partners—breeders seeking the dissemination of their products to farmers, poultry scientists in developing new poultry feed rations, farmers looking for high productivity and high market value, feed manufacturers seeking for grain in bulk quantities'. Then they met on four occasions to discuss roles and responsibilities, administration, communications and decision-making, and the budget, culminating in the development of a two-year plan.

The question of who should lead the coalition provoked considerable debate. Since the key beneficiaries were sorghum growing farmers, the FFA felt that they could lead the coalition. ICRISAT did not press its own case to be the convenors of the project but other members favoured it, saying that, ICRISAT being an international organization, would be more appropriate because they were neutral—that is, not pushing for any particular interest, but rather the success of the whole project—transparent, and accountable.

The discussion was also able to identify the roles and responsibilities. A steering committee was established to oversee the poultry feed trials. Since the whole enterprise depended upon buying of the outcomes by the poultry feed manufacturers. Janki Feeds was chosen to be the convenor of the committee.

The coalition members discussed the advantages of trying to get the private seed industry involved, but when approached they found their response was lukewarm initially. By the second year, however, three seed companies agreed to sell new cultivars at a 50% subsidized price as a way of promoting them and stimulating demand among farmers.

The clarity and appropriateness of roles—agreed jointly at the beginning of the project—was recognized as an important ingredient of success. The monitoring plan, for example, stipulated the precise responsibilities of each partner organization in relation to each other.

Defined roles of coalition partners

International Crops Research Institute for Semi Arid Tropics (ICRISAT):

- Cultivars selection from existing sorghum cultivars suitable for poultry feed
- Multiplication of seed and distribution to participant farmers through FFA
- Networking of partners under one umbrella
- Project implementation and monitoring.

Acharya N G Ranga Agricultural University (ANGRAU):

- Conducting poultry feed trials with sorghum as principal cereal ingredient
- Providing technical guidance on consumption and quality of sorghum in poultry feeds
- Improved cultivars production for the target areas.

Federation of Farmers Associations (FFA): Represent the interest of the farmers

- Identify suitable sorghum growing areas, farmers
- Disseminate the information to farmers about the improved sorghum varieties, market opportunities
- Foster effective linkages with end users.

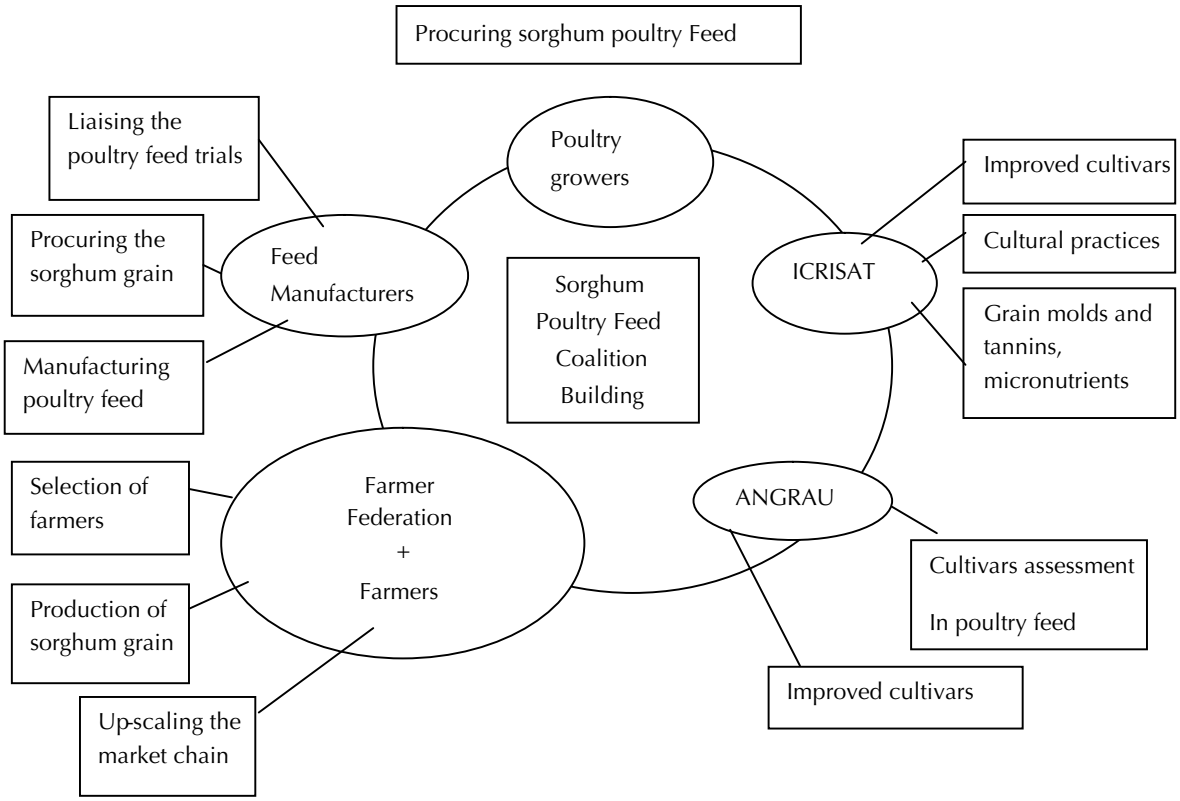
Andhra Pradesh Poultry Federation (APFF): Represent the interest of poultry producers

- Take the lead to interact with poultry producers
- Conduct/facilitate on-farm poultry feed trials on a large scale in selected locations.

Janaki Feeds: Represent the interest of feed manufacturers

- Prepare feed formulations using different proportions of sorghum poultry feed rations
- Up-scale project findings after completion of project.

Further, the coalition process is represented diagrammatically in the following figure.



Sorghum poultry feed coalition building.

3.4 Brief timeline of activities

This will give chronology of important activities and how the coalition moved to achieve designated outputs in a specified timeframe. Detailed date-wise major activities were listed and annexed.

Time	Activity	Remarks
October-November 2002	Finalized project plan	During this period the partners met for three times
January 2003	Preliminary poultry feed trials	Sorghum cultivars (CSH 16, CSV 15, S35 and PSV 16) screened from the 2002 Kharif harvest and dispatched to ANGRAU for Preliminary Poultry Feed Trails (PPFT) and to Pathologist for grain mold scaling
February 2003	Activities finalized	Roles and responsibilities of each partner was clearly charted
March 2003	Milestones finalized	Partners discussed thoroughly and finalized milestones to be achieved during the project time
May 2003	Steering committee formed and villages selected	A steering committee under the chairmanship of poultry feed manufacturer was formed to look after poultry feed trial and in another meeting the study villages were finalized and improved sorghum seeds were distributed for the farmers
October 2003	A one-day review and planning workshop at ICRISAT	In this workshop feed manufacturer asked for part-for-part replacement of sorghum in place of maize rather than iso-energy adjustment. This was well taken and ANGRAU carried experiments as for the industry requirement
November 2003	Dr Andrew Barnett from DFID, UK visited ICRISAT to evaluate the project progress	He visited FFA and met all the coalition partners. He gathered the needed information from all the coalition partners individually. Later in the afternoon, he visited the Poultry Experimentation Station of Acharya NG Ranga Agricultural University (ANGRAU) and observed the sorghum poultry feed trials and acknowledged the sensitivity arrangements made to the project by the coalition partners. He appreciated all the sorghum poultry feed coalition partners of their dedicated effort in successful implementation of the project

June-November 2003	Meetings in project villages	During crop period frequent visits to villages were made to advice farmers on improved package of practices. Field days, field visits and farmer-training programs were organized
December 2004	Surplus grain from farmers procured	Procured sorghum grain was supplied to feed manufacturers for large scale poultry trials and samples supplied for chemical analysis
January 2004	Stakeholders workshop	Main focus group is poultry producers. Prof. VLK Prasad of ANGRAU delivered a keynote address on 'poultry feed trials using improved sorghum grain'. The aim of the meeting is to disseminate the broiler PFT results to a larger group of end users (poultry producers) conducted at ANGRAU by using the 2002 kharif harvested improved sorghum grain
January 2004	Reports received	Report on levels of Tannins and Phenolic compounds, threshed grain mold severity, and Micotoxins (Aflotoxins and Fumanosin) estimated for the procured sorghum grain from the farmers; fields (2003 kharif harvest) was completed
March 2004	Writeshop at ICRISAT	All the coalition partners participated in CPHP organized two-day Writeshop on 'Developing Institutional Outputs'
March 2004	Ms Mary Underwood, Training and Development Consultant of DFID visited ICRISAT	She reviewed the project progress, especially the steps taken for coalition building and the poverty eradication possibilities through the project. She visited the PFT's at ANGRAU on 26-03-04. Later in the afternoon, she met all the coalition arrangements among the partners to derive the stated outputs of utilization of sorghum in poultry feed manufacturing
March 2004	Private sector seed companies participation	Hybrid sorghum seed was procured from the private seed companies for distributing to the project farmers. The cultivars are JK Jyothi for JK seeds and MLSH 296 and Paras Pradhan form emergent genetics
May 2004	Review meeting of coalition partners was held at ICRISAT	Partners discussed various issues regarding Developing Poultry Feed Formulations with sorghum grain procured from farmers; Progress of large-scale poultry feed trials; Forming/strengthening the farmers groups in target villages; Selection of villages and farmers for 2004 kharif sowings and distribution of seed
June 2004	Coalition partners visit to poultry trials	All the partners visited poultry feed trials at ANGRAU and reviewed the progress
August 2004	Review meeting of coalition partners was held at ICRISAT	Partners discussed various issues regarding progress of large-scale poultry feed trials; poultry feed efficiency of sorghum; status of seed distribution in project villages; decided the venue and dates for conducting field visits to the project farmers (last week of September) and training program to poultry producers (November 2004 at ANGRAU)
June–November 2004	Meetings in project villages	During crop period frequent visits to villages were made to advice the farmers on improved package of practices. Field days, field visits and farmer-training programs were organized
November 2004	The stakeholder meeting was held at ANGRAU on 9th November 2004	Main focus group is poultry producers. Dr A Rajasekhara Reddy of ANGRAU delivered a keynote address on 'sorghum based poultry feed rations—a potential alternative to maize'. The results were well received
December 2004	Writeshop	Organized a two-day writeshop at ICRISAT by CPHP, CRISP and ILAC on writing institutional histories of CPHP projects

Innovation

For all members this was their first experience of such a broad-based coalition involving different types of organization (public, NGO, private), and different skills and expertise (science, farming, commerce). All claimed that not only had they learned from working as a coalition but that collectively they had worked at a faster pace and achieved their objectives more quickly, than they could have done if working separately. The 'coalition allowed to capitalize on the synergies from sharing of skills in different disciplines with each member playing his/her role in the project'.

The method of testing the sorghum was refined by the coalition to meet the interests of all. Four improved cultivars of sorghum were selected by ICRISAT and grain produced by seventy-four farmers during the kharif (rainy season) harvest of 2002 was analysed for threshed grain mold severity and chemical traits. The poultry feed efficiency of this grain was assessed by ANGRAU. The tests on both layers and broilers showed that sorghum could entirely replace maize in poultry rations with no ill effects when consumed by the birds. Contrary to popular opinion, they demonstrated that when sorghum replaces maize the level of tannins and toxins remain low.

Although DFID had initially resisted the arguments for the necessity of these tests, different varieties produce different results, so they were eventually persuaded that these poultry feed trails were necessary. Also, the poultry feed manufacturers felt that they needed to see the results for themselves on the specific cultivators that ICRISAT were hoping to promote. Significantly, these scientific tests were repeated, on the recommendation of the Steering Committee, with a slightly different method. In the first ANGRAU test after the replacement of sorghum at different levels—at 50, 75 or 100%—the scientists adjusted the energy content, as was their custom, so that it was equal in each case. This would ensure that the experiment was not affected by other variables, that is, in this case energy content. But the poultry farmers and feed manufacturers who do not all have computers and so are not able to adjust energy levels as precisely, wanted to know the effects without changing the energy content. So in the second test, ANGRAU agreed to repeat the experiment with a simpler method (part-by-part replacement of sorghum in place of maize). A feed manufacturer's mill was used to prepare the poultry feed rations for the second 'pat-by-part replacement trial'. In both cases, the quality of feed was the same as maize, and confidence in the results was achieved on all sides.

Although the results were favourable to sorghum, the light colour of the skin of the broilers was deemed a worry. It might deter consumers form purchasing them. Although there remains some disagreement about whether consumers mind, ANGRAU thought of adding stylosanthes leaf meal to return at least 50% of the yellow to the skin colour. This idea came out of an earlier ICRISAT/ANGRAU project and was one of several possibilities (such as synthetic colouring or marigold) but was chosen because partners had supplies of the Stylosanthes leaf meal. The experiments conducted on layer birds also have produced similar results and were recently conveyed to poultry farmers and feed manufacturers. Another innovation to the methodology emerged from the poultry farmers concern that the tests should be valid for different breeds (commercial layer birds). At their suggestion the tests were repeated on another breed, and the preliminary results have so far demonstrated that sorghum appears to be healthy for all. Even though ANGRAU had not thought this necessary (because previous research informed them that all breeds would react the same way), this ensured that poultry farmers had complete confidence in the results.

Although hypothetical, it is probable that if the scientists had been working in isolation, the poultry farmers and feed manufacturers would have been less satisfied with the methods. The testing would not have reflected their own practices and concerns and they would not have been in a position to make requests for adjustments after the results had been published. Innovation within the project does appear to have been propelled by linkages between people. Learning from past experience, combining different perspective to give rise to new, synthesized ideas, and what Barnett has called 'creative imitation'[3] were all the product of the exchange of knowledge and experience between individuals and groups.

3. Barnett (2004, 1).

Culture and communication

The roles and responsibilities allocated to each member organization by the coalition as a whole were both clear and appropriate to the task and the interests of each stakeholder organization. As a result, the need for complex communication was kept to a minimum. It was required for updates, decision-making about the present and future, reviewing progress, and disseminating detailed results, but it was not as necessary for exerting pressure as it can be in advocacy coalitions. Whereas the latter often rely on communicating with a wider group, for example, to pressurize particular stakeholders to change their practices, communication within this coalition, which was mainly piloting rather than disseminating ideas, remained largely internal.

The mode of channel of communication used by the sorghum coalition varied according to context. Although regular communication was achieved by e-mail and telephone, especially for quick updates, straightforward decisions or arranging meetings, face-to-face discussion was critical at certain points. It was only academics as a group who all relied heavily on e-mail; in all the other groups only certain individuals used electronic communication very regularly while others preferred the telephone. Some had erratic or no access to the Internet, another did not know how to use a computer, and a third was perpetually worried about viruses. But the need for face-to-face discussion was not merely the result of the shortcomings of information and communication technologies (ICTs); it was essential for the process of consensual decision-making. Cognitive understanding of different points of view was vastly easier when people sat around a table rather than communicated through impersonal technology. One informant stressed the importance of courtesy to their good relationships. This is much more easily achieved through direct contact partly because non-verbal communication plays such an important part in conveying messages.

The culture of the coalition—created in part by the consensus-building approach of the ICRISAT convenors, but also nurtured by all coalition members—put a high value on courtesy. Polite forms of address, showing concern, patience and flexibility for each other, seeking peaceful resolutions to problems rather than throwing down aggressive challenges, and following the customary ritual during more formal meetings, all contributed to this culture. The 'personal touch' in communication was also important to sustain relations.

No stakeholder organizations or individuals tried to dominate or pressure each other. When farmers found that the quality of the sorghum had improved as a result of using the coalition's cultivators they increased their own consumption. This, as well as low yields due to late rains, has led to insufficient supplies for the poultry feed manufacturers. Rather than provoking hostility within the coalition, the other stakeholder organizations have been trying to bring more farmers into the coalition and gently persuading existing growers to balance their short-term need for food with their longer-term interest in establishing marketing links that will lead to greater security in years when lower quality sorghum is produced. It is the lower quality sorghum that requires the new marketing opportunities offered by poultry feed manufacturers. The fact that the coalition members have a clear-shared interest in increasing the production and sales of rainy season sorghum undoubtedly makes communication between members harmonious. They are not dealing with severe conflicts of interest within the coalition or pressure from outside interest groups.

In conjunction with shared interests, and a non-domineering approach by all members, the individuals who belong to the coalition all work and reside in the same city (with one exception: a scientist

who is based two hours drive away). It is agreed that geographical proximity makes a difference. It allowed frequent meetings, at short notice if necessary, with the minimum expenditure of time or other resources. The shared language and identity of all coalition members have reduced the potential for misunderstanding. All were from the state of Andhra Pradesh, shared the same framework of references (cultural, ecological, social, economic and political), and were Telugu speakers.

Informal communication or contact has been found to be a critical factor in the success of many networks. Workshops during which results of the poultry feed trials were disseminated (19th January 2004 at ICRISAT and 9th November 2004 at ANGRAU), may have been as important in providing opportunities for making and consolidating links as they were for conveying information. The ability of two members of the coalition from ICRISAT to exchange information and discuss the best ways forward for the project were greatly enhanced by two forms of informal contact: sharing a lift to and from work each day and smoking outside their office. Such informal discussion—without the strictures of an agenda or any emphasis on formal performance—allowed for creative and spontaneous thinking and consolidating relationships based on trust.

The coalition developed its methods of research to respond to the different types of evidence required to convince different groups of people. The scientist and poultry feed manufacturers required scientifically validated results, while the farmers needed to see for themselves. Farmers observed, 'seeing is believing'. They ranked reliable sources of information as follows: (1) seeing with their own eyes, (2) other farmers' reports, (3) scientists' reports, (4) trusted industrialists or media outlets. The coalition conducted experiments that could generate evidence to satisfy scientists, but then also enabled some farmers to see for themselves, others to learn directly from the innovative farmers, and still more to be alerted to the market potential of sorghum through media reports, workshops and brochures in Telugu.

The coalition has been highly successful in forging links between different sectors (public research institutes, farmers, and companies). The financial profitability of growing new varieties has been surveyed with positive results. During farmer meetings in the village, for example when seeds were distributed, women have not only been present but expressed their views and asked questions, especially concerning the use of sorghum as fodder. As the people usually responsible for dairy production, women have a stake in the fodder that sorghum provides. They also contribute their labour to the sorghum-production system either as members of the farming household or as labourers. Furthermore, along with other household members, they may also benefit from greater availability of sorghum for home consumption.

3.5 Research, practice and coalition building

Various 'policy networks' have been identified in research on knowledge utilization and policy-making ranging from 'policy communities', with access to privileged information and decision-making, to 'advocacy coalitions' that share beliefs and aim to change policy. The sorghum 'coalition' is a network' in the sense that the participants have voluntarily entered into the collective; they also remain part of autonomous organizations, and they come together for mutual or joint activities.[4] As a group of organizations with different values and interests, the sorghum poultry coalition could also be labelled an 'issue network';[5] alternatively, as distinct but related organizations, including private companies, who have come together to improve their performance or position, it might be categorized as a

4. Church et al (2002, 14).

5. Crewe and Young (2002, 16).

'strategic alliance.'[6] Although such labels are only of limited use, they can be helpful in exploring how different types of network or coalition will require different strategies for successful innovation, learning, communication and impact on poverty reduction.

At the same time, some lessons about improving the links between organizations are generic. Crewe and Young's analysis into the relationship between research and policymaking/practice concluded that certain principles were common to all networks, partnerships or coalitions. Initiatives are more likely to lead to impact on poverty reduction if:

- *Context:* Stakeholders have clear idea of the purpose of the partnership and plan a strategy that responds to the political and institutional set up, end-users' needs and pressures, and the 'windows of opportunity'
- *Evidence*: The key messages are credible and convincing. The acquisition of knowledge, the way it is substantiated, and its presentation and dissemination, will all affect whether it leaves a lasting impression and changes people ideas or behaviour
- *Links:* Appropriate links, alliances and chains of legitimacy are created between beneficiaries, researchers, NGOs, policymakers and other stakeholders.[7]

These are all characteristics of the sorghum poultry coalition but it is clear that the process is still more complex and involved other critical ingredients. The sorghum coalition is a 'national system of innovation' in action (as described by Lundwall and Hall et al.)[8] and is characterized by some shared and some complementary interests, flexibility, and mutual learning. The literature on national systems of innovation indicates that understanding successful partnerships requires an investigation of (a) the triggers that lead to innovation, (b) the process of collective learning, innovation, and 'creative imitation', (c) organizational culture, and (d) the quality of management of the collective.

The private sector literature on strategic alliances and networks reveals that 60% fail or under-perform in part because relationships between partners were not built carefully in advance.[9] The care with which the sorghum coalition was formed substantiates this point very clearly. Still other disciplines have relevant experience. Knowledge management has demonstrated that it is not necessarily useful for networks to attempt to formally codify knowledge, partly because it changes too quickly but also because much of it is tacit and taken for granted rather than explicit, but rather a shift is needed from 'classifying data to facilitating learning between people' within communities of practice.[10] In the case of the sorghum coalition, rather than separating knowledge generation and dissemination, these processes were jointly directed by the whole coalition from the outset of the project. This encouraged shared innovation, ownership over, and confidence in the results.

Furthermore, disciplines that have had less influence on development literature to date, such as media studies, cultural studies and psychology, shed light on the success or failure of communication strategies and interpersonal relationships within partnerships. Shared cultural reference points, and the ability to read social situations with effective social skills and empathy (or what has been called 'emotional intelligence'),[11] can both enhance effective communication between individuals, as this coalition demonstrates.

6. Creech and Willard (2001, 84).
7. Crewe and Young (2002).
8. Lundwall (1992) and Hall et al. (2004).
9. Creech and Willard (2001, 58).
10. Creech and Willard (2001, 40).
11. Patnaik (2004).

This case confirms that all these aspects play a part in what is a highly complicated process of interlocking social, political and economic relationships between institutions, groups and individuals. The importance of understanding relationships between stakeholders, rather than the transfer of knowledge or technical innovation as if it can be isolated from its social context is clear throughout. A few aspects of these relationships will be highlighted and an attempt also be made to draw out what is distinctive about this particular coalition and what it share in common with others.

3.6 Shared and complementary interests

The need for clear objectives is now repeated by all those with experience in partnerships and networks. Members of the network are more likely to prosper if they have thought through their objectives and strategy with care. But not all members necessarily share the same objectives because interests often conflict as much as they converge. That the sorghum coalition members had a driving shared interest and solution in common distinguishes it from many networks that are concerned about a particular topic (such as, transport) but cannot agree on how to tackle it and can find it difficult to move beyond information sharing as a group. The sorghum coalition's shared interest at the level of overall goal, and complementary interests expressed through outputs at the lower level, allowed it to work as a team. The decision-making is based on consensus building rather than advocacy or campaigning.

The shared over-arching interest, and complementary sub-interests, allowed the coalition to develop a feeling of 'win-win' situation. This entailed the creation of incentives that drew each member into the coalition but also kept them investing in it. These incentives were primarily economic but not entirely. All could potentially increase their financial profit, or their economic security, if the coalition succeeded. But a more elusive gain in social status possibly also encouraged participation.

3.7 Management and learning

Another aspect of planning that the coalition rightly took extremely seriously was selection of partners. Echoed throughout all the literature on partnership and networking, the good choice of partners is certainly one of the key criteria in the success of any collective enterprise. It has been pointed out that it is better to have a small number of dedicated organizations in a network than dozens of marginally committed ones.[12] The coalition followed this model as well as having a complete membership involved from start. The inclusion of no additional members may have also eased the process: the small group of organizations built up a cohesive way of working from the earliest planning stage. Because the coalition chose the right partners to meet their objectives, any changes/additions were not necessary. Once the pilot project has proved the potential of sorghum, it is arguable, however, that broader representation will ensure that participation is scaled up.

Three other aspects of management contributed to the success of this coalition and appear to be relevant to all types of networks:

1. All coalition members were involved in the negotiations about how resources would be divided between the members. The openness and transparency about the budget was important for establishing trust;
2. The monitoring framework and plan made the roles and responsibilities for each member appropriate and clear. Rather than having all stakeholders involved in all activities, and thereby

12. Creech and Willard (2001, 59).

wasting their time and goodwill, the responsibilities were logically divided so that each was only involved when their expertise was needed and/or their own interests were being met;
3. Members accommodated each other's practices, needs and perceptions where necessary. For example, ANGRAU agreed to conduct the tests twice to take into account the preferences of the private sector members.

3.8 Communication and trust

It is in the area of communication that the biggest differences between networks can be found. But there are two obvious principles that hold true for all enterprises: (1) Different types of evidence, communication channels and presentation will be necessary for different audiences. The sorghum coalition understood this from the outset: their diverse forms of communication—e-mail, phone, meetings, publicity brochures, use of the media, publications—fitted the purpose and the audience; (2) the second principle concerns trust:

'Across the literature, either in the development field or the organizational development literature, all agree that trust is of paramount importance when examining the network form.'[13]

The sorghum coalition members respect and trust each other, not necessarily in all senses and circumstances, but in ways that their enterprise requires. Newell and Swan have distinguished between three types of trust:

1. 'Companion trust: this is the trust that exists in the context of goodwill and friendship;
2. Competence trust: this is where we trust in others' competence to carry out the task agreed;
3. Commitment trust: this is a trust made fast by contractual or inter-institutional agreements, ones that can be enforced.'[14]

In this case, the sorghum coalition achieved all three, but most particularly competence trust. Regular dialogue was critical, and nurturing relationships with courtesy was a feature, but as important was the emphasis on results. As each member fulfilled own responsibilities and produced new sorghum varieties, sorghum yields, experimental results, and poultry feed, the confidence of all grew. Their determination to continue the coalition beyond the end of the grant is based in part on the belief that it will meet their interests. But that is partly possible because their relationships are founded on trust.

3.9 Social capital and scaling up

Any innovation will start with an optimism of reaching the potential level. Same connotation holds good in sorghum coalition building too. Carl Taylor rightly pointed that *there are no universal solutions but only universal processe*s for development. To sustain and enhance the benefits of this innovative coalition approach *social capital* forms the basis, which in turn helps in scaling up.

13. Church et al. (2002, 24).
14. As quoted by Church et al. (2002, 28).

Summary of lessons learned by the sorghum poultry coalition	
Generic—all partnerships	Specific—to strategic alliances
Clear objectives	Financial accountability
Flexibility and creativity	Transparent and consensual management
Credible and 'legitimate' representatives of stakeholders	Collective planning, innovation and learning
Matching evidence and communication to the audience	Competence trust important when undertaking joint activities
Monitoring of impact, not just outputs, on indirect as well as direct stakeholders	Appropriate division of tasks, stakeholders involved only when it meets their interests
Informal networking and contacts important	Regular face-to-face meetings
Inclusivity required to ensure equitable impact	Courtesy and the 'personal touch'

Box 1: Social capital and partnerships

SOCIAL CAPTIAL means 'trust' and 'cooperation networks'. As a form of capital it is possible to invest on it to save and to stock it—but it is possible to lose it too. The principal strategies for 'investing' in social capital are:

- Create a common space among different institutions (social organizations, NGOs, public sector, entrepreneurs) to identify common goals as stakeholders
- Make transparent the interests of the different institutions in negotiating common goals
- Identify the added value of cooperation through the different types of support coming from each of the stakeholders. The added value is like the interest rate of social capital.

The main outputs of social capital are:

- Reduced transaction costs among institutions
- Increase in the cooperation values in a community or region
- Increased competitiveness of the stakeholders in the market

Social capital influence in scaling up efforts

1. Technical aspects

- Creates environment for farmers to reach agreements in their organizations to support an inter learning process e.g. in sharing successful technologies.
- Allows for agreements to be reached among farmers' organizations, NGOs, public and private sectors

2. Political aspects

- Makes way for defining and implementing common policies in a local or regional context
- Facilitates designing and implementing common programs and mobilizing institutional resources human, financial, physical)
- Demonstrates to the national government the importance of cooperation in a region to raise more funds for the decentralization process.

3. Economic aspects

- Social capital makes possible new loans from banks to farmers' organizations (social guarantees among farmers can serve as replacement/alternative to collateral requirements in the absence/lack of property rights to land).
- Makes it possible to design and implement new strategies to reduce the risk of markets
- Social capital among social, public and private institutions can increase the competitiveness of a region in the country (competitive advantages instead of comparative advantage)

Source: Sanchez (1999).

Social capital

Social capital means 'trust' and 'cooperation networks'. As a form of capital, it is possible to invest on it to save and to stock it—but it is possible to lose it, too. Inter institutional collaboration and cooperation is not only important, it is crucial and a prerequisite for maximizing impact.

Juan Sanchez, in his paper presented at an international workshop in October 1999 held at the World Bank, Washington, sponsored by CGIAR NGO Committee and the Global Forum for Agricultural Research, emphasized the value of social capital in improving the quality of partnerships and increased networking. One can observe the anticipated outputs of social capital formed in Sorghum Poultry Coalition Project by increase in cooperation value, i.e. research institutes recognized the importance of stakeholders in realizing more uptake of research products by the intended users and industry as well realized the importance of science in business and NGOs enhanced their capacities and capabilities in networking for better bargaining and enhanced competitive advantage.

The social capital formed in sorghum coalition influence scaling up efforts in *technical* and *economic* as well as *political* aspects.

Technical

- Coalition preliminary efforts in establishing sustainable linkages between farmers associations (FFA, APPF), research institutions (ICRISAT, ANGRAU) and private sector (Janaki Feeds) are successful. The experience and confidence attained by the partners hopefully result in enhanced and wider networks for mutual benefit.

Economic

- Attempts to establish sustainable economic inter linkages between sorghum farmers and poultry feed manufacturers will reduce the risk of high price fluctuations in the market both for the farmers and feed manufacturers.
- The market link between the producer and processor will eliminate the middlemen in market consequently a higher price for the farmers and lower price for the feed manufacturer, which results in poultry feed cost little cheaper, enhancing the competitive advantage of poultry industry.

Political

- Generic lessons from this project demonstrate to the government the required inputs to provide a congenial policy environment for partnerships/alliances/networks/coalitions.
- This enables policymakers to come out with specific policies for poultry industry to improve its competitive advantage over other regions/nations, at the same time benefiting the poor sorghum growers.

Scaling up

In sorghum poultry coalition all the scaling up types, as refereed by Uvin and Miller (2000), are relevant for one or other organization. All types of scaling can be observed in each organization but based on the type of organization one or other type of scaling up can prominently be anticipated.

ICRISAT and ANGRAU, and primary research organizations scale up more in terms of functional and organizational, i.e. the activity is increased to realize the anticipated benefits at end user level and improving the management capacity of staff.

FFA and APPF can observe quantitative and functional scaling up by increasing membership size of the organization and enhancing its activity base. They can also lobby for political scaling up.

Janaki Feeds: The private company can move beyond service delivery towards empowerment by establishing direct market link with farmers, which eliminates the middlemen in market chain who are taking maximum share of price spread. This ultimately leads to maximizing of profits for the company and enhanced returns of the farmers. It looks more of political scaling up.

Box 2: Types of scaling up

- Quantitative: a program or an organization expands its size by increasing its membership base or constituency through increase in geographic area or budgets.
- Functional: a community-based program or a grassroots organization expands the number and the type of its activities e.g. from agriculture production to health, nutrition, credit, training, literacy etc.
- Political: the organization moves beyond service delivery towards empowerment and change in structural causes of under development. This usually involves active political involvement and the development of relations with the state.
- Organizational: community-based program or grassroots organizations increase their organizational strength to improve the effectiveness, efficiency and sustainability of their activities. This is through diversifying fund source, increasing level of self financing/income generating, assuring the enactment of public legislation earmarking entitlements within the annual budgets for the program, creating external links with other organizations, or improving internal management capacity of staff.

Source: Uvin and Miller (2000).

As pointed by Paul Rice,[15] the initial economic inter linkages established in this coalition approach will be strengthened by

- Organizing farmers themselves to achieve economies of scale to produce economically and profitably
- Furthering linkages with other possible industry utilizations.

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Appendix 1 List of coalition members representing their organization

Dr Belum VS Reddy, Principal Scientist, ICRISAT

Mr P Parthsarathy Rao, Senior Economist, ICRISAT

Dr K Gurava Reddy, Visiting Scientist, ICRISAT

Dr A Rajashekhara Reddy, Head LRI, Poultry Experimental Station, ANGRAU

Dr V Ravinder Reddy, Associate Professor, ANGRAU

Dr D Ramachandraiah, Principal Scientist (Millets), ANGRAU

Mr A Bhavani Prasad, Vice President, Federation of Farmers' Associations

Mr Varaprasad Reddy, Scientist, Federation of Farmers' Associations

Mr CLN Rao, Managing Director, Janaki Feeds

Mr Ch Janardhana Rao, General Secretary, Andhra Pradesh Poultry Federation

Sorghum and Poultry Farmers.

Appendix 2 Key meetings of coalition

10-10-2002	Discussion with Coalition partners to finalize project plan
16-10-2002	Discussion with Coalition partners to finalize project plan
06-11-2002	Discussion with Coalition partners to finalize project plan
17-02-2003	Detailed activities finalized with the partners
28-02-2003	DFID-CPHP approval communicated to all partners and agreements sought with partners
17-03-2003	Milestones discussed and finalized with partners
02-05-2003	Monitoring and Evaluation training workshop of DFID-CPHP
23-05-2003	Formation of Steering Committee in meeting with coalition partners
23-05-2003	Review meeting of coalition partners. Study villages selected by collation
29-07-2003	Two coalition partners (ICRISAT and Janaki Feeds) visited the poultry experimentation station an ANGRAU to learn about sorghum as poultry feed
19-09-2003	Two-coalition partners (ICRISAT and Federation of Farmers Associations) conducted a meeting in Gangapur village of Jadcherla mandal followed by a field visit
07-10-2003	A one-day review and planning workshop of the project was held at ICRISAT, attended by the representatives of all coalition partners along with 7 sorghum farmers form four of the selected villages
14-10-2003	ICRISAT conducted a farmers meeting in Kandwada (one of the selected villages) of Chevella mandal and visited the sorghum fields of selected farmers
24-11-2003	Dr Andrew Barnett (on behalf of DFID, UK) visited ICRISAT, and other coalition members, to evaluate project progress
10-12-2003	Review meeting of coalition partners held at ICRISAT. The partners discussed various issues including: procuring the sorghum grain from the farmers, purchasing project equipment, grain requirement for large-scale poultry feed trials, stover sample collections, reports to be submitted to donors and budgetary matters
19-01-2004	A stakeholders meeting was held at ICRISAT on 19th January 2004 with all coalition partners of the project. The main focus group was poultry producers. The aim of the meeting was to disseminate the results of the broiler poultry feed trial conducted at ANGRAU to a larger group of poultry producers
11 and 12-03-04	CPHP of DFID organized a writeshop on 'Developing Institutional Outputs' at ICRISAT
25 and 26-03-04	Ms Mary Underwood, Training and Development Consultant of DFID, visited ICRISAT and reviewed the project progress, especially the steps taken for coalition building and the poverty eradication possibilities of the project
14-05-2004	Review meeting of coalition partners was held at ICRISAT. The partners discussed various issues including: developing poultry feed formulations with sorghum grain procured from farmers; progress of large-scale poultry feed trials; poultry feed efficiency of sorghum; a brochure prepared for training the poultry producers; questionnaires prepared for monitoring; forming/strengthening the farmers groups in target villages; selection of villages and farmers for 2004 kharif sowings; distribution of seed; equipment procured under the project; reports sent to donors and budget receipts and disbursement
09-06-2004	ICRISAT partners visited the large-scale layer poultry feed trials being conducted at the Poultry Experimentation Station of ANGRAU
23-08-2004	Review meeting of coalition partners was held at ICRISAT. The partners discussed various issues including: poultry feed formulations with sorghum grain; progress of large-scale poultry feed trials; poultry feed efficiency of sorghum; the brochure; progress of farmers groups; status of seed distribution in project villages; the venue and dates for conduction field visits to the project farmers (last week of Sep) and training program to poultry producers (9th November 2004 at ANGRAU); and reports sent to donors and budget receipts and disbursement
09-11-04	Training program on 'sorghum based poultry feed ratios—a potential alternative to maize' was held at ANGRAU to disseminate results on the layer poultry feed trial conducted by ANGRAU. It was attended by coalition members, poultry farmers, scientists from ANGRAU and the media
6 and 7-12-04	CPHP (south Asia) of DFID organized a writeshop on 'Writing institutional histories' at ICRISAT

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