From Disciplinary Research to Stakeholder Participation in Research for Development in Oil Crops

Final Report

International Development Research Centre
and
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ABSTRACT

This paper reconstructs the experiences of the International Development Research Centre (IDRC) in supporting research on oil crops, focusing on identification and engagement of stakeholders. This paper is based on an extensive review of oil crop-related projects funded by IDRC, and key informant interviews with former project staff who worked on IDRC-funded oil crops projects in Kenya, Tanzania, and Zambia. The review is complemented with an overview of related research approaches that support stakeholder participation in research work.

IDRC supported oil crops research in Africa, the Middle East, and Asia for a number of years between 1970 and the late 1990s. This support evolved through a number of stages, from the development of research capacities among institutions via training and technical support, to support to biological research in breeding and agronomy, and later to support for network activities. In the late 1980s, IDRC assistance to oil crops research shifted from support to breeding and agronomy and networking activities to more encompassing production-to-consumption activities. At that time, attempts were made to include more stakeholders in the decision-making process. These attempts were meant to ensure that research benefits had a wider outreach.

The review and comparison of the IDRC supported research work with that of more recent stakeholder analysis tools has shown that IDRC support to oil crops research contributed greatly to the Centre's current greater attention to stakeholder analysis and participation in research conceptualisation, planning, implementation, monitoring, and evaluation. The Production to Consumption Systems Approach (PCSA), which was an integral part of IDRC's involvement in oil crop research work in Kenya, led to wider debates on how research should respond to its potential beneficiaries and how best to include them in the formulation and implementation of research activities.

ACRONYMS

AFNS	Agriculture, Food and Nutrition Sciences
AGREF	Agricultural Research Foundation
COMESA	Common Market for Eastern and Southern Africa
CDC	Commonwealth Development Corporation
EAI	East African Industries
EU	Egerton University
IAR	Institute of Agricultural Research
ICRISAT	International Centre for Research in Semi-Arid Tropics
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IMF	International Monetary Fund
MEPS	Method of Assessing, Programming and Managing Integrated Production/Consumption Systems
NARS	National Agriculture Research System
NGO	Nongovernmental Organization
NORP	National Oil Crops Research Programmes
OILS	Oilseeds Industry Liaison Service
ORCESA	Oil Crops Research Capacity for Eastern and Southern Africa
ORN	Oil Crops Research Network
PCS	Production to Consumption Systems
PCSA	Production to Consumption Systems Approach
PCSR	Production to Consumption Systems Research
PO	Program Officer
PTA	Preferential Trade Area for Eastern and Southern Africa
SAP	Structural Adjustment Program
TDA	Thomas Development Associates
TFNC	Tanzania Food Nutrition Centre
UFFRO	Uganda Freshwater Fisheries Research Organization
USAID	United States Agency for International Development
VOPS	Vegetable Oil/ Protein Systems
VOPS (K)	Vegetable Oil/Protein Systems (Kenya—project)
VOPS (T)	Vegetable Oil/Protein Systems (Tanzania—project)
VOPS (Z)	Vegetable Oil/Protein Systems (Zambia—project)
VOPSIN	Vegetable Oils/ Protein System Improvement Network
ZNFU	Zambia National Farmers Union

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1 IDRC and Oil Crops Research

The International Development Research Centre (IDRC) began its support of oil crops research in the early 1970s, by including Canadian breeders who were then working to diminish the erucic acid content in rapeseed oil. Branching out from its initial mandate to employ Canadian research capacity to further development, IDRC embarked on an oilseeds improvement project in Rwanda in 1976, which focused on yield improvement and developing disease-resistant sunflower and rapeseed. The main stimulus, however, came after the Canadian breeders obtained the "double low" erucic acid rapeseed varieties, which were later marketed under the name "Canola." Later IDRC ventures in support of research on oil crops dated from the early 1980s in Asia, especially in China and India, and in Africa. Most projects supported by IDRC were implemented by national research centres or units and sanctioned by their respective governments. The main stakeholders and the research decision-makers in these projects were the researchers and their institutions in conjunction with IDRC staff. At a higher level were IDRC and the respective governments whose main interests were the results but also total project costs and cost-sharing in implementation. The success of the oil crops research work in Canada was shared and reinforced as part of the IDRC support to oil crops research in China, another major world consumer of rapeseed.

The first phase of the Chinese rapeseed research (1983-87) was coordinated by the Chinese Ministry of Agriculture and included the Shanghai Academy of Agricultural Sciences and the Qinghai Academy of Agricultural and Forestry Sciences. Results, which included Canadian materials adapted to drought conditions and new varieties obtained by the research team, were first exposed to wider scientific scrutiny at the first Sino-Canadian Symposium held in 1984 in Shanghai. The second phase (1988-92), included additional utilization of Canadian varieties as breeder parents and the introduction of appropriate methods of chemical analysis required to improve breeding techniques and test the quality of oil and meal derived from rapeseed.

The principal stakeholders in these efforts were the Governments of China and Canada, represented through the researchers from the Ministry of Agriculture partnered with other participating Chinese research institutes, and IDRC staff, respectively. The ministry representatives and IDRC staff made most of the decisions on what to research. The research team, including Canadian support, implemented the research decisions.

Drawing from its experience in China and to cover Africa, in 1981 IDRC supported the first phase of the Oil Crops Research Network (ORN) that ran until 1984.

The goal of the Network was to develop stronger oilseed research in national programs by

- Linking oilseeds program researchers in India and elsewhere in South Asia with those in Africa;
- Exchanging germplasm between the continents to their mutual advantage;
- Providing relevant information to national oil-crop improvement programs; and
- Developing relevant training.

An adviser was hired and based at the Holetta Research Station of the Institute of Agricultural Research (IAR) in Ethiopia. His role was to manage the basic operations of the Network:

establish a strong base within Ethiopia's national program; regularly visit countries in the region to provide support, suggestions, and encouragement to national scientists in developing stronger oilseed research programs; facilitate mutual visits of scientists, organize workshops, relevant training courses, and information exchanges, and facilitate germplasm exchanges needed in developing improved varieties of oilseeds. Most of ORN's coordination responsibilities were left to the IDRC Program Officer (PO) based in Ottawa. The ORN served IDRC-supported research teams in Asia and Africa, promoting mutual communication and collaboration to refine research agendas and support their implementation through visits of the adviser, coordinated technical support visits of Canadian experts, and the formation/consultation of the oil crops documentation centre in Ethiopia.

The Network's operations were strongly influenced by issues perceived to be important to IDRC, such as giving greater attention to Africa. It brought together biological researchers from Africa, Asia, and Canada. Its activities centered on germplasm collection and exchange, scientific workshops, the publication and distribution of a newsletter, and consultancy visits. The constituency of the Network was the biological scientists engaged in Network-related projects and their associates, that is, plant breeders, agronomists, pathologists, and entomologists. There was no explicit attempt to include other disciplines or stakeholders in Network activities or deliberations. ORN's main concern was the generation of production technologies with experimentally proven potential to address yield improvement, disease and pest resistance, adaptability to different agro-ecological zones (AEZs) through knowledge generation on local adaptability of lines brought from other countries, and breeding and agronomy trials. The researchers themselves determined most of the research priorities, either within their individual national programs or during Network meetings. IDRC staff and the Network coordinator were also important players in determining research priorities. The researchers' efforts under the Network appeared restricted mainly to the development of new varieties, without explicit attention to their wider impacts on development. Perhaps the only opportunity for consultation beyond the researchers themselves started with the establishment of variety trials on farmers' fields to observe and measure yields under farm conditions. Even then however, the main research concern was to get an appreciation of the on-farm yields and also of the adaptability of the varieties to different AEZs. The on-farm research design did not have a mechanism for measuring impact on intended beneficiaries and initially did not solicit any inputs from the farmers or other stakeholders, except for permission to use farmland for trials. These trails were an early and instinctive approach to the stakeholders, mainly to understand their production reality and little to enquire about their decision-making interests.

The Oil Crops Research Network allowed national programs and their scientists to organize collaborative research efforts designed to assist member countries solve common technical production problems in a more resource-efficient way. Participating national research programs, IDRC, the Network coordinator, and the researchers were considered the main stakeholders, while farmers were designated as target beneficiaries, passive stakeholders, seldom explicitly consulted. At the time, the active stakeholders were largely those who financed and conducted the research work, and their respective institutions. Farmers were perceived as represented by the extension arm of a country's ministry of agriculture. The term "research-extension linkage" gained popularity at this time. The researchers believed their work too advanced for farmers to comprehend, and therefore any farmers' concerns were expected to be channelled to the

researchers by extension personnel who had direct contact with farmers. However, these extension workers had no role in the design of the research. If they were consulted at all about the problems farmers faced, it appeared to be cursory and infrequent.

During phase I of ORN (1981-1984), IDRC support focused on the following crops: *Brassicas,* sesame, sunflower, safflower, niger seed, linseed, castor, and groundnuts. However, because the International Centre for Research in Semi-Arid Tropics (ICRISAT) was supporting groundnuts research, IDRC's interest in this crop diminished. In later years of the Network, it was recommended that the number of oilseeds crops that IDRC was sponsoring be reduced to avoid duplicating the work of other donors. Many of these decisions were made during Network workshops through consultations between the researchers and the Network coordinator. IDRC's limited funding constrained independent actions by Network members and to some extent, prevented more effective networking between countries (TDA 1992).

Some of the key achievements of phase I included visits by the Network adviser to all oil crop projects in the region to review research with participating scientists, Canadian scientists consulting on visits to Egyptian and Ethiopian projects, and organizing the first oilseed workshop.

Other Network achievements included:

- Establishment of an oilseeds library at Holetta
- Support to a highland oilseeds research project in Ethiopia and development of the lowland oilseeds research project
- A series of germplasm collection expeditions and increasing the number of local oilseeds collections.

During phase II (1984-87), the ORN carried out similar activities in a more structured form, with an emphasis on servicing an existing network. The main achievements of phase II were:

- Enhancing the capacity of the program staff to conduct oilseeds research through training
- Providing technical advice and encouragement by the program adviser
- Publishing and distributing three annual newsletters
- Coordinating visits for national program scientists from India to other countries
- The Network consultant advised on research in several countries
- Cooperation between Agriculture Canada and the Network allowed for rapid progress on oilseeds anther culture, with Indian and Ethiopia technicians working in Canada.

On the whole, the general effects of phase II interventions were to increase the capacity and transfer of technical know-how from Canada and India to less advanced countries in oilseeds research work. The Network newsletter also expanded outreach to a wider circle of scientists and stakeholders interested in the oilseeds sector.

The coordination of Network activities shifted from the IDRC Program Officer (PO) in Ottawa to the Network Adviser based in the Holetta Research Station in Ethiopia, and a Network consultant (as opposed to the adviser) advised on research in several countries. The Network had an adviser since its inception in 1981, but the original incumbent left in 1984. During this period, grants were also made to Somalia for germplasm collection and for a national oilseeds workshop in Kenya. Two workshops were held.

During the third oil crops workshops held in Ethiopia in 1986, some changes were discussed to improve the operational efficiency and effectiveness of the Network. These included:

- Developing a separate *Brassica* subnetwork;
- Establishing a Network Steering Committee;
- Improving mechanisms for germplasm exchange; and
- Increasing collaborative research activities.

Network workshops were used as the main decision-making forums for participating programs. The establishment of the Steering Committee and Network subcommittees were finally established during phase III of the Network, to provide assistance to the Network Coordinator in management and decision-making. However, funding constraints reduced the extent to which this was possible (Thomas 1992). Establishing the Steering Committee was an important milestone in extending decision-making beyond the coordinator to a broad committee.

Phase III of the ORN (1987-89), emphasized information exchange, technical training (mainly in breeding and pathology), and the establishment of subnetworks. Training focused on oilseed technician and it was usually crop specific. Some of the specific training events included:

- Research techniques for sesame and safflower, India 1987;
- *Brassica* breeding and agronomy, India 1989;
- *Brassica* quality training, China 1990; and
- *Brassica* protection training, India 1990.

Phase III intended to strengthen earlier network activities by establishing effective, practical liaisons between national oilseeds programs in Eastern Africa and South Asia.

Four subnetworks were created—*Brassica*, sunflower, sesame, and "other oil crops." The subnetworks were expected to improve research efficiency by grouping researchers working on particular crops together. Researchers working in similar crops sought the opportunity to work more closely together without the distraction of other issues and crops, which held little or no interest for them. The researchers also felt that this could lead to enhanced focus and more resources for each commodity, and a more efficient use of resources. For instance, the *Brassica* subnetwork had joint programs between two or more countries, focusing on white rust (*Scerotinia),* blackleg (*Altanaria),* aphid (*Orobanche)*, drought, and quality. These subnetworks enabled scientists specializing in the various crops to interact more closely and economically in subnetwork workshops, rather than in the larger Network meetings, and to organize successful collaborative research programs.

The evolution of the subnetworks within the oilseed network was in response to the specific concerns of scientists working on different commodities. For instance, when the researchers met in IDRC-supported workshops, they would push for the oilseeds of their particular concerns, for example, sunflower pests or diseases. The subnetworks diminished existing tensions by putting together scientists working on similar crops. Researchers in the subnetworks operated at the national level but were linked at the regional level to share experiences, results, and germplasm. In some of the subnetworks and countries, attempts were made to create national networks of scientists working on specific crops. For example, in Kenya, members of the sesame subnetwork

collaborated in producing a sesame production handbook for the country. Although these efforts did not result in an expansion in the type of stakeholders working together, they did link those with specific crop interests and work. Since the networks were developed as IDRC-supported forums, linkages with other agencies remained weak. In retrospect, IDRC should have put more effort in engaging other agencies as stakeholders in defining the evolution of the networks and as potential cofunders of activities. However, partnership in research was not common or promoted during those days.

The difficulties experienced in the larger network were mainly due to the fact that different crops manifested different research problems associated with their production. Therefore, bringing together researchers with divergent interests, which was initially seen as an efficient way of knowledge-sharing and resource use, produced tension and competition for funds. Researchers were not trained for or interested in complex problems or interactions.

Another source of tension was the attention and funding given to those scientists working higher profile crops such as rapeseeds and sunflowers, and thus "stealing the show" from scientists working on "lower profile" crops. The Asian scientific contingent was more vocal and numerous and pushed hard for resources for oil crops that were relevant to the Asian continent. African researchers were not happy.

During the fourth network conference, which took place at Egerton University in January 1988, ORN researchers had an opportunity to listen to a presentation by the Vegetable Oils/Protein Systems (Kenya) project (VOPS K) research team, which aroused considerable interest. This marked the first time that Network members as a group discussed issues outside breeding, agronomy, pathology, or entomology! However, the Network specifically indicated that it would support national programs to incorporate socioeconomic variables and total systems approaches strictly upon request. In retrospect, one can conclude that there was interest, but also reluctance within the ORN to move beyond production technologies in focus crops and adopt a broader approach to research.

Finally, consultant Neil Thomas's evaluation of the ORN phase III (March 1992), recommended that the Network should motivate and enable research teams to incorporate relevant socioeconomic variables, concepts and tools, as well as a total systems perspective into planning and evaluating oil crops research. This recommendation grew from the inability of Network operators to identify linkages between strong National Oil Crops Research Programmes (NORPs) and benefits at the farm-level or beyond. By refocusing the networks, potential linkages with farmers would become clearer and more effective. This recommendation was also influenced by the emerging research experiences of VOPS (K) that had generated far-reaching interest across a wide cross section of other stakeholders in the oil crops subsector and beyond ORN's existing constituency.

Some notable achievements of phase III include:

- Use of Asian resources in training activities;
- Strengthening national programs through training (four training sessions were held during phase III) and workshops;

- Germplasm exchange between member countries (419 accessions were multiplied and distributed since the Network's inception);
- A readership of 600 recipients worldwide for the Network newsletter; and
- Formation of a Network committee and subcommittees.

Prior to 1992, IDRC funded oil crops research under its Agriculture, Food and Nutrition Sciences (AFNS) division. The division had a budget of $25 million (Canadian dollars throughout, unless otherwise specified) and a staff of 27. The division consisted of six programs: crop production systems, animal production systems, fisheries, forestry, post-production systems, and agricultural economics. Due to budget constraints, IDRC modified and reduced its organizational structure. Following the reorganization, oil crops projects were funded from the Environment and Natural Resources (ENR) Division, which was a merger between the older AFNS and Earth and Engineering Sciences divisions, and the Environmental Policy Programs of the older Social Sciences division. The new ENR division had a much smaller budget—only $4 million to support agricultural and NRM research. The decision to implement a new, broader interdisciplinary strategy (TDA 1992), and the lower budgetary allocations meant IDRC could no longer support purely agricultural production research. IDRC made a conscious decision to shift its focus and approach and allocate resources to strengthen national programs, while at the same time, seeking other donors to complement support in this area (Edwardson 1992).

1.1 Conclusions

Even though the Oil Crops Research Network originated as a network of biological researchers, efforts were made over time to broaden its outreach and themes. This move was intended to increase research efficiency and to accommodate strong researcher stakeholders. The decision to establish commodity subnetworks was to enable a wider base of scientists with interest in a particular commodity the opportunity to interact more closely. It was also a way to focus on lower profile commodities which some scientists, especially those from India, felt were not getting sufficient attention. As the ORN evolved, it undertook more work in Asia and less in Eastern and Southern Africa, contrary to what was initially intended. The research groups and their strengths drove the process.

The evolution of broadening the Network's scope was relevant from a stakeholder and analytical perspective, as it contributed to effective decision-making in the networks. The networks were important indicators of the need to identify, understand, and include stakeholders in commodity research. Initially, the networks were mostly composed of a single category of stakeholder working from a self-centred perspective/interest. In time, that perspective evolved and other stakeholders, especially famers, and funding agencies were approached.

The workshop held in Njoro, Kenya (January 1988) introduced new dimensions in research design and implementation in the sector for the consideration of the ORN constituency. The workshop suggested that there was a need to look at the subsector beyond production and to consult both horizontally and vertically. IDRC recommended that researchers approach organizations such as ICRISAT, the Food and Agriculture Organizaation (FAO), and the

International Maize and Wheat Improvement Center (CIMMYT), as potential partners but this was not pursued with vigour.

2 Evolution of the Production to Consumption Systems Approach (PCSA)

2.1 The VOPS (K) experience

By mid-1987, IDRC, particularly the Agricultural Economics Program (AEP) of the AFNS division, raised the question of whether, in light of strong international supplies and low prices of edible vegetable oils, it remained relevant for the Centre to continue its strong support to production-oriented oil crop research. Low international prices and substantial global surpluses highlighted possible new avenues of support. Would it be better to invest in research on alternate and more profitable crops for farmers? Related concerns within the AFNS division included whether oil crops research was generating farmer-relevant technologies in sufficient amounts, and whether such technologies were, in fact, being used by farmers. This marked a turning point within IDRC. It was concluded that researchers must be further challenged with questions regarding the implications and impacts of their results. Was low productivity the main constraint to greater and more economical oil crops production? Were oil crop farmers the only audience and was increasing their production potential the only relevant target for research in the sector?

To examine these issues further in the context of oil crops, a consultant (Dr Carlos Zulberti) was hired to study the Kenyan Vegetable Oil/Protein System. His work was to identify both internal and external constraints to increasing Kenya's production of oilseeds (Economic Feasibility of Oilseed Production, DAP 87-5510, November 1987-January 1988). The study's findings were presented at the Fourth Oilseeds Research Network Conference held at Egerton University, Njoro, 25-29 January 1988. The study showed that the factors affecting growth in the Kenyan Vegetable Oil/Protein System were complex and involved many actors, not only farmers. This was a crucial moment, as IDRC began to consciously encourage researchers to focus on identifying relevant stakeholders and to consult them in relation to research subjects, issues, and intent.

The presentation and discussion of the Kenyan Vegetable Oil/Protein System (VOPS), sparked interest among many Kenyan researchers to fill the knowledge gaps identified within the sector. Egerton University took the lead and with encouragement from IDRC prepared a proposal for two follow up workshops. The proposal was funded (DAP 87-4792 at a cost of $35,600) and the first workshop held on 16 February 1988. That workshop attracted more Kenyan researchers who supported the consultant's suggestion for more in-depth studies of the VOPS. Participating researchers then organized themselves into multidisciplinary groups and began plans to carry out the desired studies. At the second workshop on 15 March 1988, researchers presented their group plans and consolidated them into a single plan with a budget. This plan was funded as the first phase of VOPS (K) in May 1988 (DAP 88-0027-01) at a cost of $234,100. This phase was essentially a six-month rapid assessment of the VOPS and aimed to identify research and policy interventions that would improve sector performance. The project ran from May to December 1988. Results were presented in October 1988 and published as a series of working papers that were used extensively.

Phase II of VOPS (K) (DAP 88-0253) was funded in February 1989 through May 1989 at a cost of $223,100. Phase II goals included enhancing the institutional base and coordination capacity of the project coordination office located at Egerton University, to further its role of monitoring the sector and improving subsector performance. Associate researchers were recruited between March and April 1989, while efforts to engage key stakeholders and lobby government ministries and the private sector continued. A third phase was designed as a two-tier approach. The two tiers consisted of the Coordinating Unit work and a series of "satellite" projects addressing specific sector interventions to complement the work of VOPS (K) as suggested by the results of phase II. The satellite projects were implemented by three different institutions but were administered through the Coordinating Unit at Egerton University to ensure consistency in the sectoral strategy and approach. This was new within IDRC because up to this point, all other projects were independently funded and monitored by a Centre Projects Officer, without an intermediary local institution. This working structure was an early attempt by IDRC to create a greater sense of ownership in local research institutions, in preparation for greater "devolution" later.

The third phase of VOPS (K) (DAP 89 00 5801) was funded from June 1989 to July 1993 with a budget of $936,276, contributed by several programs in IDRC. Again, this marked a new arrangement within IDRC, as previous program funding did not feature collaboration across units of the Centre. This innovation meant that there were more "stakeholders," even within the Centre. From July 1989 onwards, VOPS (K) used various forums, including field demonstrations, trade exhibitions, and national agricultural shows to raise awareness on the potential role of oilcrops in poverty alleviation and to secure greater commitments from policy makers to address the policy constraints previously identified in the sector.

The first satellite project (Oilseed Processing DAP 89-0231) under VOPS (K) was approved in June 1990 and was implemented by the Agricultural Engineering Department at Egerton University. At the same time, various IDRC headquarters staff showed great interest in the evolving efforts within VOPS (K) and took a proactive role in securing limited funding from the Rockefeller Foundation, the Canadian International Development Agency (CIDA), the Association des Produits à Marché (APROMA), the International Soybean Program (Intsoy), CIMMYT, and the Eastern and Southern Africa Management Institute (ESAMI), and in some cases, to persuade agencies to consider cofunding VOPS(K) activities from November 1989 until the end of the project. Other satellite projects that were funded during the third phase included the Sesame Improvement Project (DAP 90-0071) in January 1990 at the University of Nairobi and the Industrial Organization Project (DAP 89-0201) at Jomo Kenyatta University of Agriculture and Technology in May 1990. At the same time, IDRC delegated the responsibility of administering the satellite projects to the Coordination Unit at Egerton University. At the level of research definition, management and implementation, the VOPS(K) was an early multi stakeholder effort in the experience of the Centre.

The final component of the third phase of the VOPS (K) was to appoint an Advisory Committee that would shepherd the sector's research and development agenda. This proved to be more problematic than initially envisaged, as nominated individuals withdrew from the committee selection process. Eventually, in February 1992, VOPS (K) convened an Advisory Committee

comprising representatives from various stakeholder groups to guide the development of the project. Unfortunately, this effort came too late in the life of the project to have much impact.

2.1.1 Lessons learned

Improving the overall performance of a commodity sector requires extensive collaboration among stakeholders and other actors

For collaboration to occur between the stakeholder groups and institutions that constitute a commodity sector, it is crucial that they become aware of each other and of their mutual interdependence to obtain benefits and improve the system's overall performance. IDRC's experience shows that stakeholder's awareness of mutual interdependence and advantages of collaboration are not spontaneous in agricultural commodity systems. In most cases, their interaction is more competitive in nature. Thus, the Production to Consumption Systems Approach (PCSA) requires identifying a "*champion*" and a "*championship group"* to lead the process, facilitate communication and collaboration. and maintain the dynamic. Ideally, the champion must have a excellent understanding of the subsector. The neutrality of the champion is of paramount importance to the PCSA. For the first two phases of VOPS (K), Egerton University played the role of champion. However, due to a number of factors, its status as champion gradually eroded toward the end of phase III.

Stakeholders' position, behaviour, and influence are determined by the political and economic environment

The political and economic environment plays a significant role in determining the interest and involvement of stakeholders in a commodity wide coordinating effort. The push for economic liberalization, starting in the late 1970s and early 1980s as part of the structural adjustment programs (SAPs), peaked at the end of the Cold War and about the time of phase I of VOPS (K). From then on, pressure mounted on the Kenyan government to liberalize the country's political space and the different economic sectors as well. Through the World Bank and the International Monetary Fund spearheaded this drive for economic liberalization regionally. Within the Kenyan government, most of the influential technical staff and political appointees had grown up within a highly regulated economic environment and vigorously resisted any move toward liberalization. On the political front, the ruling class had become significantly repressive because they recognized that maintaining a controlled economy was critical to sustain power. At that point, there was little distinction between the advocates for political liberalization or those heralding economic liberalization.

It was within this charged economic and political environment that VOPS (K) was implemented. Conservative stakeholders in the Vegetable Oil/Protein System had more influence compared to those who favoured change. They included highly influential parastatals such as the National Cereals and Produce Board, Kenya Seed Company, the Central Bank, and their supporters within government, especially in the ministries of Finance, Industry, and Agriculture, and the Office of the President. Liberal stakeholders (those who encouraged, supported, or took a neutral position) were mostly found in the private sector, donor agencies, and among academics. Liberals in the government were less influential and expressed their views with caution.

Fresh information provided by the project on the Vegetable Oil/Protein System was welcomed by both conservative and liberal stakeholders as each group measured how this new information could strengthen their position.
The creation of an Advisory Committee by the VOPS (K) team toward the end of the third phase opened up new opportunities for the conservatives to manage change on their own terms. Their influence and control of this committee went to unusual lengths, even so far as to insist that the Project Coordinator and Principal Investigator wear acceptable ruling party symbols.

The involvement of different stakeholders in VOPS (K) evolved throughout the project. During the first phase diagnostic stages (May-December 1988), academics and mid-level government technical officials were primarily involved. In the second phase (February-May 1989), senior government officials and industry leaders became more involved as they recognized the value of the information generated from the diagnostic studies. VOPS (K) took up the challenge to produce quality information with IDRC encouragement. This reflected the considerable effort that had gone into making stakeholders aware of the research, its findings, and value. During the third and final phase of VOPS (K) (June 1989-July 1993), the Coordination Unit engaged in significant interaction with industry leaders, policy makers, and other researchers. Much time and effort was spent facilitating collaboration between the institutions involved in data collection, processing, and dissemination in order to improve the quality and reliability of the data.

As IDRC demanded tangible results, project staff spent considerable effort identifying and engaging key decision-makers, particularly in government, to share the information generated under phases I and II and to lobbying for its incorporation in policy documents. To underscore the progress made by VOPS (K), government ministries often asked the VOPS (K) team for comments on drafts of policy papers on the subsector. This was groundbreaking, as previous Kenyan government policy documents were usually prepared based on government objectives and industry representations, without any direct input from researchers. For instance, in November 1988, the Principle Investigator was invited by the Ministry of Industry to join the National Inter-ministerial Committee on Oil Crops, while the project consultant was hired by the World Bank to assist the Ministry of Agriculture design a national oil crops project. This was another milestone as IDRC realized the catalytic role that the VOPS (K) approach was having on other players in Kenya. Subsequently, the IDRC EARO began discussions on linking the VOPS (K) experience and approach with the Oilseeds Network with its own programming. During a November 1988 visit to Nairobi by IDRC's Associate Director of Agricultural Economics, the Centre agreed to fund a second transition third phase of the project. In its successful linkages with the appropriate government officials responsible for specific areas of public policy and by providing unique expertise that helped decision-makers accomplish their goals, Egerton University emerged as a critical and influential driving force in shaping public policy in the oil crops sector.

Government needs the participation of other stakeholders in policy formulation and dialoguing

VOPS (K) made significant contributions in the policy development of Kenya's vegetable oil subsector. First, the project spearheaded subsector policy analysis outside of government.

Secondly, VOPS created many opportunities for participation by decision-makers and it regularly advocated for liberalization of the oil crops subsector. Its analysis of subsector data was a valued tool in providing decision-makers with the information needed to follow new policy directions. However, IDRC judged these efforts as futile exercises that diverted resources and attention of the Coordination Unit away from policy analysis and delivery o project targeted outputs. In retrospect, it appears that these efforts were critical to raising the profile of the sector and in pushing the government to take specific policy decisions. From August 1990 onwards, VOPS (K) was consulted by the Ministry of Industry in drafting cabinet memoranda that preceded policy announcements. In October 1990, the government awarded the project enhanced access to customs and exercise data on oil crops. In October 1992, the government finally liberalized the ex-factory, wholesale, and retail prices of edible oils.

3 Local NARS Require Significant Capacity for Research Management

One of the aims of IDRC during the phase III was to transfer management responsibility for VOPS (K) and the satellite projects to Egerton University. Egerton's performance during the first two phases had confirmed its institutional commitment and capacity to fulfil such a role. Unfortunately, subsequent staffing and management issues eroded the university's ability to effectively administer the project. Beginning in August 1991, Egerton experienced major changes in management, with key departures from the Coordinating Unit. Subsequently, the commitment to the satellite projects suffered, and pace of project implementation slowed significantly as new managers arrived. Inconsistent staffing, confusion over responsibilities, and drawn out and uncertain financial arrangements contributed to a diminished capacity during phase III. Funding institutions and projects through a local institution was relatively new to IDRC, and its lack of experience, coupled with Egerton's difficulties affected output from both the Coordination Unit and the satellite projects. According to Thomas (1993), the lack of transparent financial mechanisms and other weaknesses in Egerton University became a major obstacle that delayed implementation and frustrated researchers.

4 Advancing PCSR Methodology: A Long-term Institutional Commitment

Lack of capacity, staffing changes, and limited institutional commitment at Egerton University resulted in little progress in applying the Production to Consumption Systems Research (PSCR) methodology during phase III of VOPS (K). Nevertheless, VOPS (K) pilot tested the Method for Assessing Programming and Managing Integrated Production/ Consumption Systems (MEPS) within the Kenyan context, with the training of two researchers at UNIDO headquarters in Vienna on the methodology. Later, however, one of the researchers left the project limiting further development. Using existing literature, MEPS was finally tested within the animal feeds industry but this effort was not repeated in the Vegetable Oil/Protein System as serious organizational problems emerged that resulted in the eventual dismantling of the entire coordination team. Testing this methodology fell short of its objectives due to a weak information base and lack of local capacity.

4.1.1 The Advisory Committee and private sector stakeholder motivation

Finally, VOPS (K) set up an Advisory Committee to improve planning and ultimately guide growth in the sector, with representation from key stakeholders—government, private sector, and research institutions. The idea of the Advisory Committee was initially mooted during the results reporting workshops of the VOPS(K) diagnostic surveys and was enthusiastically embraced by some of the leading firms for various reasons.

Before 1985, the leading edible oil processing firm in Kenya was a transnational company. In 1985, the firm incorporated a subsidiary company to promote oilseed production with shareholding from the Commonwealth Development Corporation (CDC), the International Finance Corporation (IFC), and East African Industries (EAI) with an initial capital investment of US $50 million. Initially, the subsidiary was successful in promoting rapeseed as a rotation crop in wheat-producing areas, and sunflower in maize-producing areas. However, the company soon realized that it was unlikely to recoup its investment in the venture if it could not convince the government to provide more support or protect local producers against competition from Malaysian palm oil.

When VOPS (K) was launched, the sector's leading processors were at a crossroads. They embraced the Advisory Committee as an alternative route to engage government in discussions on the impacts of existing policies of the time, using the platform provided by Egerton University.

Within that same period, the largest cereal milling company in Kenya also had oil crops sector related interests, ranging from a corn oil extraction subsidiary to a feed milling enterprise. These businesses faced stiff competition from small hammer mill operators who were grinding whole grain at prices that attracted lower income consumers. As a result, the corn oil processing plant was running below capacity and therefore decided to invest in a sesame processing plant located on the coast, targeting the lucrative salad oils market. Enthusiasm was dampened, however, when it was realized the plant had only enough sesame to run for a month and would then have

to resort to coconut and palm oil blends to operate. This would result in a shift in both strategy and markets.

The firm regarded participation in the Advisory Committee as a means to win government support for local industry, as well as possibly increasing the viability of their investment, all under the umbrella of a neutral, public body. Finally, a representative from one of the small oilseed crushing firms that had been operational since 1943 was co-opted onto the Advisory Committee. During the diagnostic studies, it was discovered that this firm had been managed by the same family for more than 40 years. The director was willing to share this experience with others in the sector. Getting this firm on board as a member of the Advisory Committee was a great accomplishment, as it was recognized by its industry peers as a leader in the sector with extensive knowledge of the policy environment. Efforts were made to include other small firms in the Advisory Committee but all declined to join. The reason given by the majority of the smaller firms who declined was that they felt the presence of the larger processors on the committee limited any meaningful dialogue, because in their view, their larger competitors colluded with government in determining policy. This suspicion lingered throughout VOPS (K).

These cases illustrate the challenges in activating a stakeholder group that would work for collective sectoral improvements, while also responding to the specific interests of participating stakeholders. This is the difficult and exhaustive challenge of the champion.

The VOPS (K) Advisory Committee was probably the first effort in Kenya to build a transparent stakeholder representation on sectoral issues, including policy. However, the absence of the Ministry of Finance on the Advisory Committee seriously undervalued its contributions and credibility with the private sector. Without the participation of this ministry, the private sector realized the limited influence any VOPS(K) committee recommendations had on government actions or policies. The Ministry of Agriculture's decision later to initiate a parallel Inter ministerial Oil Crops Advisory Council, essentially ignoring earlier efforts, further diminished the value of VOPS (K) for the private sector. Of greater concern was the Rural Services Design Project, funded by the World Bank with a budget of US $2 million and implemented by the Ministry of Agriculture. This venture replicated the work done by VOPS (K) at a lower cost. Despite being a member of the Advisory Committee, the Ministry of Agriculture did not build on the VOPS' accomplishments. This scenario makes clearer the need to thoroughly investigate who really wins and who loses in sectoral interventions such as VOPS(K) aimed at improving overall sectoral performance. Such overall improvements must be also of interest to the stakeholders in the driving seat to be accomplished. While it is difficult to directly attribute sectoral change to VOPS initiatives, it can be argued that VOPS (K) did influence both the Inter-ministerial Advisory Council and the World Bank efforts.

VOPS (K) was used to pilot the PCSA application within the vegetable oil system in Kenya with the intention of applying that experience to other countries and other commodity systems. Toward the end of the project, VOPS (K) trained participants from Kenya, Uganda, Tanzania, and Zambia on the Production to Consumption Systems (PCS) approach and its application in commodity research. The course was highly regarded, but participants felt that the approach was not fully defined, materials too dense, and that more fieldwork would significantly improve their understanding of the approach.

4.1.2 Conclusions

The VOPS (K) project pioneered the concept of involving stakeholders as an integral part at all stages of addressing the constraints in a commodity system. It also demonstrated the importance of maintaining a total commodity systems approach to research and development. However, this holistic view does not necessarily affect the variables on which important sectoral decisions are based. The PCS approach as envisaged and applied in VOPS (K) could have enriched its impact if more resources (both human and financial) had been devoted toward lobbying and understanding the motivations of key decision-makers. This could have played a role in the decision-making process which led Kenya into assuming a World Bank loan which ultimately did not alleviate problems in the sector. Awareness raising and advocacy are the necessary companions of this type of research for development, and their inclusion in the research process requires further review of existing research protocols and concepts that would label them as interfering with a "scientific" approach. Several lessons emerged from this experience. First, identifying stakeholders and their interests requires time and commitment. Whereas some stakeholders are easy to identify and incorporate in the process, others are more difficult to target. Secondly, it is not always practical to involve all stakeholders but the absence of key sectoral stakeholders can affect overall credibility. Critical stakeholders can be discovered and recruited by surveying other stakeholders on the one hand, and lobbying key decision-makers in both the private and public sectors on the other. Third, stakeholder engagement can be a lengthy and at times frustrating process that requires long-term individual and institutional commitment. Finally, the selection of the championship group is of paramount importance to the process and must be done with care to reduce the potential for conflict. In the case of Egerton University, rapid management changes in the institution coupled with undue interference from the political regime seriously undermined any efforts to sustain a neutral position on the vegetable oil sector. The research team was disbanded before the approach could be more fully refined and stakeholder interests fully developed.

4.2 ORCESA

In October 1991, a team from IDRC and AGREF[1] visited Zambia to look at national needs and issues in developing plans for a revised oil crops network (Riley 1991). The team met with the national oil crops research coordinator, several private processors, the Technology Development Unit of the University of Zambia, the Director of Agriculture of the Preferential Trade Area (PTA), representatives of donor-funded projects, Africare, and the Ministry of Agriculture (Riley et al. 1991).

A similar visit to Tanzania led to consultations with the Tanzania Food and Nutrition Centre (TFNC), Ministry of Agriculture, representatives of the Institute of Production Innovation at the University of Dar es Salaam, representatives of SIDO (Small Industry Development Organization), and oil seed processors (Riley 1991).

[1] AGREF is the Agricultural Research Foundation, a regional agriculture research organization founded and registered in Kenya.

Zambia and Tanzania were members of the Oil Crops Research Network (ORN). Some of the oilseeds breeders from Tanzania and Zambia were already familiar with the work being done by VOPS (K) in Kenya. Whereas ORN had concentrated on breeding and germplasm exchange, VOPS (K) had brought into play a socioeconomic dimension on research into oil crops and at the same time widened the net of stakeholders involved in the research process, at least at the consulting stage. ORN was in its final stages of phase II, while VOPS (K) was implementing phase III. Through VOPS (K)'s work, the need for greater stakeholder involvement and understanding of the oilseeds commodity sector had been underscored. IDRC started promoting a wider understanding and consultation of stakeholders in the research process.

The purpose of the trips to Zambia (Samson Chema) and Tanzania (Ken Riley) were to look at national needs and issues in developing plans for a revised Oil Crops Network. As indicated earlier, the two countries were members of the ORN, and IDRC was keen to see whether the investment in the two countries had led to expected benefits or if a revised approach was in order. During the visits, a wide range of stakeholders and potential stakeholders within the oilcrops and vegetable oils subsector were consulted. The lessons from the VOPS (K) experience played a major role in shaping the discussions held during these consultations. VOPS (K) had completed diagnostic studies, established an advisory committee composed of representatives from various stakeholders in the edible oil industry, and was implementing pilot projects designed to address some of the problems uncovered in its diagnostic studies. VOPS (K) had also recommended broad policy and institutional restructuring measures to spur growth of the oil crops subsector in Kenya. There was already great public debate about the subsector, and different stakeholders were contributing to the policy and development dialogue. On the other hand, pressure was mounting on ORN to reform and embrace greater stakeholder participation and broader research agendas going beyond traditional breeding and agronomy.

The meetings in Zambia and Tanzania highlighted the fact that ORN's 10 years of work had neglected a large constituency of the oil crops subsector.

The fact-finding missions in Zambia and Tanzania, established two things—an initial understanding of the state of the oil crops subsector in each of the two countries, and contact with individuals and institutions interested in the development of the subsector. During the consultation meetings, there was obvious interest in starting a dialogue among different stakeholders in the industry. In Zambia, an initial dialogue was already underway along with the establishment of the Oilseeds Industry Liaison Service (OILS). In Tanzania, no association or forum for consultation on the oil crops subsector existed.

Respondents in both Tanzania and Zambia were in agreement that knowledge about each country's oilseeds subsector was shallow, and that a more in-depth analysis was required. They indicated that there was limited communication and interaction between different stakeholders in the subsector and this contributed to overall poor sectoral coordination and development. Even though each of the countries had an oil crops research program, researchers primarily focused on the biological aspects of breeding and agronomy, neglecting the bigger picture framing the sector and role of stakeholder participation in research results. Limited consultation between researchers and their clients was typical. Even nongovernmental organizations (NGOs) working

in the emerging rural oilseeds processing sector had limited interaction with other stakeholders beyond those they had targeted.

Liberalization of the agriculture sector was underway as part of the SAP drive by the IMF and World Bank. The role of the private sector was becoming more important. Tanzania was decontrolling prices, allowing competition, and moving from a centralized to a more free enterprise economy.

Those consulted during the visit by Riley and Chema were of the view that there was a need for greater stakeholder involvement and consultation to enhance development of the subsector. Stakeholders endorsed the view that an undertaking similar to that done of the VOPS (K) project and driven by the industry was necessary. Based on these findings, IDRC approved the Oil Crops Research Capacity for Eastern and Southern Africa project (ORCESA3-P-90-0102, $424,194) to respond to the emerging needs of the subsector in Tanzania and Zambia. The project was largely meant to transfer and test the PCSR principles evolved from the Kenya experience. The ORCESA project was led by AGREF in close interaction with the ORN and as an attempt to integrate the PCS approach within ORN's program of international collaboration.

ORCESA adopted a participatory approach in which all stakeholders were involved in a diagnostic and identification exercise for priority areas for subsector development.

In Zambia, ORCESA found a suitable partner in OILS—the Oilseeds Industry Liaison Service—which had been formed before the launch of the project. The genesis behind OILS was the frustrations the national oilseeds research coordinator encountered in negotiating the release of superior oilseeds varieties and the subsequent poor adoption rates attributed to the lack of a reliable seed multiplication and distribution system and an inefficient extension system. At the same time, the private sector (processors and farmers) were fighting over oilseeds pricing. Processors felt that oilseeds were overpriced since the processed oil had to be sold at government-controlled prices. Farmers were equally convinced that local processors wanted their produce for a song. OILS was started by industry actors in order to respond to these challenges (Personal communication by the then oilseeds research coordinator and processors visited in Zambia, Mbwika/Mburu April 2004). The group included representatives from industry (oilseeds and animal feed processors, and input suppliers), the Ministry of Agriculture, NGOs, and the Preferential Trade Area (PTA).[2] OILS was later incorporated under Zambian law and members agreed to pay a small fee. There was initial resistance to OILS, however, especially among oilseeds crushers, who viewed each other as competitors and could not see the benefits of a common forum. With some persuasion and fact sharing, the stakeholders agreed to sit together. OILS was seen largely as a lobby group for the subsector.

When AGREF started implementing the ORCESA project, it relied on OILS as its main link to the industry. Industry sources, however, indicated that even though they embraced the project with good intentions, OILS' original agenda was supplanted in pursuit of ORCESA project objectives. This turn of events was partially blamed for the collapse of OILS following the end of ORCESA. Industry insiders indicated that the ORCESA project came with different priorities

[2] A regional trading block based in Lusaka, Zambia, which was trying to initiate an agro-industrial development program within its agricultural division.

from OILS, but since the project had funding there were no open objections. The coordinator indicated that many in the private sector considered the project's activities purely academic and of little relevance. The project was proposing internal collaboration to improve overall performance under contextual circumstances, while the initial onus centred on a collective lobbying effort to influence changes in specific aspects of sector environment. Remaining disagreement and apparent recrimination seem to point to insufficient interaction and communication between project implementation and participating stakeholders, that is, arriving at a better understanding of shared conceptual framework and ciscumstances.

To recap, ORCESA's main objective was to strengthen the capabilities of national research systems to identify and solve the critical problems hindering the performance of the vegetable oil/protein sector in two countries (Tanzania and Zambia) of Eastern and Southern Africa. The specific objectives were:

- To identify leaders and establish teams of researchers in the oilseeds sector of the two Eastern and Southern African countries;
- To train country teams in the PCSR approach and provide an opportunity to design technical and policy research agendas to improve the vegetable oil/protein sector of their respective countries;
- To promote coordination among national PCSR teams in the oilseeds sector and within the Oilseeds network;
- To develop mechanisms to incorporate and expand the use of the PCSR approach as part of future activities of the Oil Crops Research Network; and
- To develop the basis for a modular course on the concepts and utilization of the PCSR approach for inclusion in formal long- and short-term training of professionals in Africa.

In implementing the project, AGREF adopted a rather mechanical way of replicating the VOPS (K) process. It required the country teams to undertake a literature review of the sector and produce an information abstract to form the basis of engaging the subsector in a dialogue to identify information gaps. This took time to accomplish and the stakeholders, especially in Zambia where the majority were in private business were growing concerned. Within OILS, they felt they had identified sectoral problems and felt little need to embark on further analytical work. When the researchers were brought for the PCSR course at Egerton University, it appeared that the private sector stakeholders felt that they were being immersed in academia. They were more concerned about solving perceived problems, which required immediate action, and less on the perceived more academic pursuits of the project.

After the literature review, a workshop was held to discuss the findings and a decision was taken, championed by AGREF and the NGOs, to undertake an in-depth study to fill in information gaps. This did not go down well with the private sector again but they never voiced their opposition. However, it was evident that most of the stakeholders started seeing the exercise as academic and of no immediate benefit. At the same time, OILS held its annual general meeting. The resultant change in chair, coupled with the coordinator departing on maternity shortly thereafter, created an administrative vacuum and added management and coordination challenges to OILS and the ORCESA project.

Despite the differences in their objectives, OILS was in basic agreement with ORCESA proposals in terms of a sector stakeholders group, collaborating to improve overall sector performance.

At the start of the ORCESA project, stakeholders in the edible oil industry saw an opportunity to influence policy, stabilize prices, and enhance the performance of the sector. The implementation of a VOPS-type analysis was seen as an opportunity to provide a clearer understanding of the options, policies, and possible outcomes of improving the operations of the components of the subsector. What concerned the industry was the lack of follow-up on the issues that had brought them together in the first place and the lack of a clear understanding of where the studies were leading. By the end of the ORCESA project, OILS meetings had become erratic and most stakeholders had lost interest in the association.

In Tanzania, the Tanzania Food and Nutrition Centre (TFNC) [3] assumed the host institution/coordinating role of the project and established a steering committee to manage the research process. Unlike Zambia where there was already an infant oilseeds coordinating body, in Tanzania various institutions implemented different aspects of oilseeds development along the p-c-s continuum. TFNC was largely concerned with nutritional aspects of oilseeds and other crops. SIDO and Carmatec focused on the development and testing of rural oilseeds processing technologies, while T-Press concentrated on promoting rural processing of oilseeds. The Ministry of Agriculture targeted policy issues and promoting production activities through extension services. The Tanzania Agricultural Research Organization (TARO), on the other hand, focused on research in breeding and agronomy. The Ministry of Trade was responsible for trade promotion and policy. Processing industries in the country were largely government controlled, with few private concerns. The public processing companies, which were largely controlled by cooperatives, were in the process of being privatized. All of these institutions/organizations operated separately without any formal or informal forum for sharing information.

Tanzania was also heavily dependent on imports of crude and fully refined palm oil from Malaysia. This introduced tension into the system, especially among competing edible oil companies. The private sector was involved in cutthroat competition, resulting in unfair practices, such as importing fully refined oil for packaging but declaring it as crude, so as to attract lower tariffs. Those who operated above board sought ways to address these practices and looked for opportunities to elicit government action. This group were immediate supporters of the proposed stakeholders' forum and saw it as an avenue to confront those involved in unfair trade practices.

Given the small size of the private sector in Tanzania's oilseeds industry, the group did not have as many private stakeholders as Zambia. The committee was dominated by TFNC researchers, Ministry of Agriculture personnel, one private processor, and a Ministry of Trade and Industry representative. The committee was chaired by a senior official from the Ministry of Agriculture with a mandate to:

- coordinate all VOPS activities;
- advise on policy issues related to VOPS; and
- prioritize actions for implementation.

[3] A national public institution mandated to undertake research in food and nutrition.

The inclusion of various stakeholders in the sector analysis was also meant to achieve broadbased consensus on identifying major constraints and priorities for immediate and long-term interventions, and ownership.

In order to find common ground for negotiations, the project supported a subsector diagnostic study that looked at the entire sector from production to utilization. The research teams for ORCESA consisted of multidisciplinary researchers from various organizations and institutions in each country. This was an effort to create a sense of ownership of the results. The research teams began with a literature review of the subsector. The information gathered formed the basis for initial discussions, which identified information gaps and the need for further research. It was agreed that an in-depth diagnostic study be carried out to fill in the information gaps identified by the literature review.

The literature review was able to demonstrate that the two countries:

- Were heavily reliant on imported vegetable oils;
- Had potential for production of raw material for domestic processing of edible oils;
- Had national per capita intake of edible oils below the world average;
- Lacked a development policy for the subsector; and
- Spent large sums of scarce foreign exchange on importing edible oils.

The research teams were led by a national coordinator, who was selected on the basis of his/her understanding of the subsector, interest in working in the subsector, and potential ability to influence of the stakeholders. The national coordinator was later referred to as the "champion." The champion worked under the direction of a steering committee, which was later referred to as the "championship group" and was composed of people and institutions with interests in the subsector. Its mandate was to provide policy direction, and lobby the government to implement favourable policy changes. The group was also responsible for hosting national workshops.

The activities of ORCESA attracted the interest of the regional trading block PTA, which at the time was developing its own agro-industrial development framework. Based in Zambia, PTA had worked with OILS and agreed to host the secretariat. This provided PTA an opportunity to learn of the PCSR methodology, which it later tried to introduce in other member countries.

In Tanzania a research team made up from the TFNC, Ministries of Agriculture, Trade, and Industry, and a private oilseed processing company carried out the VOPS diagnostic studies.

During the ORCESA project, individual meetings with NGOs/projects that were looking at the oilseeds subsector in each country continued, so as to learn from each other and plan joint strategies. In Zambia, Africare was the most visible and supportive NGO of the ORCESA project and was one of the founding members of OILS. It was also the single largest promoter of rural oilseeds processing in the country. It was also promoting improved sunflower seed multiplication and distribution. It worked largely with small-scale rural processors and farmers. The Zambia National Farmers Union (ZNFU) was also a strong founding member of OILS and continued to support its activities. Both ZNFU and Africare were seen as the main representatives of the poor smallholder in the oilseeds sector. The Ministry of Agriculture also

played a role in representing smallholder farmer interests. In Tanzania, a number of NGOs were promoting rural oilseeds processing and represented the interests of the poor farmers and consumers, especially those in the rural areas.

In each of the two countries, national oil crops workshops were held, bringing together a cross section of stakeholders in the oilseeds industry. These were billed as the first ever such workshops to bring together diverse stakeholders in the industry. Stakeholders were able to review the information presented by the researchers and make recommendations for further research and identify areas for policy change and immediate investment. The workshops formed a basis for expanding the stakeholder network and provided a forum for joint deliberations and information sharing. They also reinforced the need for stakeholders consultation in subsector development.

The promotion of rural-based oilseed processing technologies, and up-front stakeholder participation in both Tanzania and Zambia brought to the fore the need for developing soft-shelled and high oil content sunflower seeds. The focus on soft-shelled products arose because hard shells were increasing the wear and tear of the screw expressers and the higher oil content increased the returns to oilseed processing. The project was also able to facilitate the acquisition of soft-shelled sunflower material "Record Seed" from Tanzania for multiplication in Zambia. One of the NGOs promoting rural processing of oilseeds in Zambia and connected with the project agreed to finance multiplication and distribution of the seed.

4.2.1 Achievements

When AGREF and IDRC staff visited Tanzania and Zambia prior to the ORCESA project, a major concern by stakeholders in both countries was the lack of a coherent data/information base on the subsector and the lack of, or poor, communication between stakeholders in the industry.

In Zambia, the ORCESA project was able to strengthen the already established OILS committee. In Tanzania, where no organized stakeholder group existed, the project was able to establish a steering committee with representation from most stakeholders, although farmers were absent from the group.

ORCESA used a participatory and consultative approach to build a database on the oil crops subsector in the two countries. The information gathered was debated by stakeholder representatives at national workshops.

A number of policy recommendations that were of concern to processors and farmers were also raised with the government and recommendations made regarding government action.
In Zambia, the project introduced a soft-shelled sunflower seed "Record" from Tanzania, which was of high oil content. This was largely of concern to NGOs and projects that were promoting rural oilseeds processing. At the end of the project, Africare established a rural oilseeds multiplication program using the "Record" seed.

4.2.2 Lessons learned

One of the principal lessons learned was that researchers must take the time to understand the aspirations of stakeholders, their interests and fears, and the trade-offs. In the case of OILS, there was a bit of a rush to fulfil the project objectives without the flexibility to accommodate the immediate concerns of OILS stakeholders. The project team failed to appreciate the fact that the group had been formed with one purpose and tried to fit the objectives of ORCESA within the concerns of OILS. The project design and its commitments also affected the flexibility of the AGREF research team.

Again, in engaging stakeholders one needs to understand the diversity of the group, not only in terms of its interests but also its level of knowledge (general and academic), bargaining power, and influence. This is useful in terms of determining the approach so as not to disenfranchise the less powerful or less knowledgeable members of the group. How to incorporate more flexibility into these type projects remains as a question.

The length of engagement is also important. ORCESA, and VOPS (K) as well, never really allowed sufficient time to align the thinking of both researchers and stakeholders in terms of how they view the sector and their approaches to research design and planning. The two years allowed for implementing ORCESA was rather short and left the sector with more questions than answers. While the project easily identified factors constraining the sector, it fell short in providing and monitoring solutions.

The other important lesson from ORCESA experience was the fact that a sector needs a committed and knowledgeable champion to sustain the process and to keep the collective action going. The champion should also command respect from the rest of the stakeholders and be neutral. The indisposition of the VOPS (Z) coordinator during implementation of ORCESA was a major blow to the project in Zambia. The situation worsened with the arrival of a less qualified OILS chair toward the end of 1993.

In Tanzania, most of the steering committee members were drawn from the public sector or NGOs and therefore did not have a strong stake in the subsector. Again, the steering committee was a creation of ORCESA and not much time was spent to nurture it into a self-sustaining group. Discussions with former steering committee members (Mbwika/Mburu April 2004) indicated that the project was rather hurried and that many did not understood the principles of the PCSR. Discussions with the TFNC Managing Director, who served as the VOPS (T) Coordinator, also indicated that the project raised too many expectations and folded before it could achieve all of its objectives. However, the Centre was pleased with the enthusiasm raised within the sector, which resulted in the formation of an oilseeds manufacturers association. The association has however, ceased to exist for reasons unknown to TFNC.

4.2.3 Conclusions

In terms of approaches, the ORCESA project closely followed the process used in Kenya by VOPS (K), and achieved a similar level of analysis and stimulation of the sector, but with fewer resources and in a shorter time. The familiarity of the core team with the groundbreaking

experience in Kenya helped. Most stakeholders were involved from the onset in data collection and dialogue on the state and needs of the subsector. VOPS (K) brought in private stakeholders much later after most of the information on the sector had been gathered, analyzed, and presented. Experience indicated that there was no need to wait and it was advantageous to involve as many stakeholders as early as possible. There was also an attempt in ORCESA to bring more stakeholders, such as farmers and NGOs, than had been possible under VOPS (K). Elements of implementation of some of the opportunities that required immediate attention were also made part of the project, such as the provision of soft-shelled sunflower seed from Tanzania to Zambia, where an international NGO and member of OILS, volunteered to fund multiplication activities. In Zambia, a private sector-led organization of stakeholders had been formed prior to the ORCESA project, without government support and with limited resources. Members agreed to pay a fee to facilitate the activities of a group coordinator. This again demonstrated the willingness of stakeholders to utilize their own resources for subsector development. It appears that ORCESA, to some extent, influenced the direction of the OILS group because it had the resources to pay the coordinator. However, ORCESA did not give OILS sufficient time to nurture its own priorities, and influenced the nature of activities that were to be conducted. There was hidden resentment that emerged too late to salvage the group, as most stakeholders, mainly private processors, felt activities were too academic. This must be interpreted as an unfortunate consequence of the learning process and inadequate attention, at the time, to the rationalization and preference of the stakeholders. To OILS, the issues that brought them together, namely disputes over prices between processors and farmers and dumping cheap oil on the market, were clear cut and did not need require extensive research. Perhaps ORCESA's approach should have been more flexible to allow the group to define its priorities, which ORCESA should have helped implement. These lessons are used today in stakeholder interaction.

The demise of OILS highlighted the need for strong leadership. Because the OILS constitution required a rotating chair between different stakeholder groups, there came a time when insiders thought the chair was too weak and lost interest in championing the group. Unfortunately, the coordinator of OILS was on a prolonged leave at the same time, compounding the lack of leadership. This led to a lapse of activities and the subsequent disinterest in the group by a majority of the members.

One main conclusion is that the research intent and approach, even though it may coincide on the whole with that of the stakeholders, may not be aligned and in some cases may conflict with the practical approach and immediate strategies of the stakeholders. This has implications for the concepts and tools of participatory research or interventions—that is, who participates and who leads. Should research support stakeholder groups (such as OILS) or do researchers ask stakeholders to participate in the research, which may not necessarily be totally or temporarily aligned with the interests/goals of stakeholders. Sensitivity to these types of considerations are much more advanced in modern versions of participatory research and stakeholder analysis tools but were not yet present at the time of the VOPS (K) and ORCESA experiences.

Leadership and articulation of stakeholders' interests is therefore an important factor in any system development program.

4.3 VOPSIN

The Vegetable Oils/Protein System Improvement Network (VOPSIN), was the successor to ORCESA. VOPSIN was designed to build upon the results and experiences of the ORN series of projects, VOPS(K), and ORCESA (Tanzania and Zambia). The project was conceived following a meeting organized by the Preferential Trade Area for Eastern and Southern Africa (PTA)[4] in February 1993 to review its agro-industrial development strategy. During the workshop, several countries expressed a willingness to work with COMESA to develop their oil crops subsectors. At the meeting, VOPS (K), VOPS (T), and VOPS (Z) presented papers on their experience with the PCSA application on the oil crops subsector. COMESA was at the time hosting VOPS (Z) in Zambia and so was already familiar with the methodology. The majority of the countries represented at the meeting were members of the ORN or had their own projects on oil crops, but wanted a more encompassing sectoral development focus. This led to the development of the Vegetable Oils/Protein System Improvement Network (VOPSIN) project.

VOPSIN (93-8477, $596,745) was started in 1994 and covered the following countries—Uganda, Malawi, Tanzania, Zambia, and Zimbabwe. The VOPSIN project mandate was to extend VOPS (K/T/Z) activities in more countries in the COMESA region. The project was very much an extension of the ORCESA project but covered more countries and now fell under the umbrella and promotion of COMESA and its focus on regional integration and trade. It benefited from VOPS (K/T/Z) experiences. It coincided with a "tide" of agriculture liberalization in the region and many countries were looking for solutions to crucial problems facing the agriculture sector. Stakeholder consultations were already viewed as important avenues for seeking feasible solutions to current problems. In Zimbabwe, where liberalization was slowly advancing, the government sought views from stakeholders on how to conduct business in a liberalized economy.

In a way these efforts also helped researchers widen their vision and better position their work in terms of priorities and venues to further magnify their contribution to development and to identify potential partners and agendas in a more effective and efficient manner.

In line with its protocol, COMESA desk officers/contact points in each country were approached and asked to identify stakeholders in the oilseeds subsector for initial consultations. The officers, with assistance from ministries of agriculture and trade, also compiled data on national oilseeds production, processing, and utilization, which was used as a basis for initial consultations and characterization of the sector. The project endeavoured to search and lobby for the inclusion of as many stakeholders as possible in project decision-making from the outset.

Within each target country, an "oil crops steering committee"[5] was formed. The committee was responsible for supervising all project activities under VOPSIN in each country. The committee met monthly to review progress in terms of data collection or implementation of activities.

[4] The organization has since evolved into the Common Market for Eastern and Southern Africa (COMESA).
[5] These were referred to as task forces and consisted of representatives of stakeholders in the oil crops subsector. The PTA desk officers or an officer appointed from the ministries of agriculture acted as conveners.

Although the committees were not legal entities, in some countries, such as Zimbabwe and Uganda, they received substantial recognition from high level ranking government officials. In Zimbabwe, the Minister of Agriculture formally recognized the steering committee as the ministry's advisory agent on oil crops policies. The minister even went ahead and established a secretariat at ministry headquarters, where they would meet, deliberate on issues, and forward recommendations to the ministry.

VOPSIN borrowed heavily on oilseeds sector coordination activities from more experienced countries like Zimbabwe, Kenya, and South Africa. In South Africa, the Oilseeds Board, a grouping of farmers with large interests in oilseeds farming, was an important ally in the latter part of VOPSIN. VOPSIN drew lessons on how the South African Oilseeds Board had managed to mobilize farmers into a commodity development group with considerable policy influence and international trade connections. The Board is self-sustaining and finances research for the oilseeds subsector. It set up a marketing wing and a grades and standards laboratory especially for groundnuts and had an elaborate fundraising mechanism for its membership. However, its constituency was far more limited than those recruited under VOPS (K) and ORCESA.

During the implementation of VOPSIN, an attempt was made to define the stakeholders in the oil crops subsector. Two categories of stakeholders[6] were defined—key stakeholders and key players. Key stakeholders referred to those individuals or institutions with a direct stake, either financially or materially, in the subsector and who could suffer/or gain financially or materially depending on sector performance. These included oilseeds farmers, oilseeds processors, oilseeds consumers, etc. Key players were defined as individuals or organizations whose actions, or lack of, could affect the subsector positively or negatively but who were unaffected by sector performance These include extensionists, researchers, policy makers, and some NGOs, for example, Appropriate Technology-Uganda (ATU), Africare in Zambia.

During VOPSIN, subsector studies were completed in Uganda, Malawi, and Zimbabwe. Zambia and Tanzania continued strengthening their stakeholder involvement in sector development initiatives. Attempts were made to form stakeholder steering committees in Uganda, Malawi, and Zimbabwe. The goal was to facilitate broad stakeholder participation in sector analysis, planning, and identification of priorities for action.

4.3.1 Attempts to form an oilseeds council

Uganda came close to establishing an oilseeds council when a national consultant was hired by VOPS (U) to seek views on the need, structure, and functions of such a body. This was largely a result of the broad interest expressed in the subsector by a number of organizations, including governmental units and private enterprises. At the time, the United State Agency for International Development (USAID) was funding the Uganda Oilseeds Processors Association

[6] A DFID-funded BGS technical report on Groundwater Protection and Management for Developing Cities defines stakeholders involved in groundwater as those individuals and institutions that are concerned with, or have an interest in, groundwater resources and their management. They include groundwater users who have a direct interest in groundwater resources, and those involved in groundwater development, management, and planning, including public sector agencies and ministries, private sector organizations and firms, NGOs, and external sector agencies.

(UOSPA), a grouping of small-scale oilseeds processors, that was largely concerned with the availability of processing material, especially soybeans, and marketing end products. The association had substantial support from the Uganda Co-operative Alliance. Appropriate Technology Uganda (ATU) was also promoting small-scale processing, mainly sunflower, in the eastern and northern parts of the country. The Uganda National Farmers Association was also promoting production and marketing of oilseeds especially, soybeans among its farmers. The major edible oil processors in the country were concerned about the impact of imported oils and fats from Kenya.[7] At the time, the Government of Uganda was also negotiating with the International Fund for Agricultural Development (IFAD) for funding for a major oil palm development program. In Uganda, it was easy to identify stakeholders and bring them together.

The consultant's report was presented to all stakeholders at a workshop funded under the VOPSIN project and a resolution passed to work for the registration of a National Oil Crops Development Organization (NODO). Unfortunately, the organization was never launched due to lack of funds and the subsequent end of VOPSIN support. However, the steering committee continued promoting policy reforms and allocation of resources to the sector by the government and donors.

VOPS (U) was able to influence the government and IFAD to include a traditional oilseeds component in the palm oil project. The Fund was also convinced that a model oilseeds development council was essential to faster development of the subsector. By the end of VOPSIN, the IFAD project had indicated it would use the VOPS(U) model of a oilseeds development council. The VOPS (U) coordinator was made the IFAD project coordinator and continues in that role to this day. Through the intervention of the VOPS (U) steering committee, US $2.3 million of the IFAD funding was allocated to traditional oilseeds development while US $33 million went into the development of the oil palm project. This was and important outcome of the VOPSIN. Initially, all funding was marked for the oil palm project. Stakeholders, especially UOSPA,[8] were concerned that despite the huge investments by donors to promote production and processing of sunflower and soybeans, the government was borrowing money to invest in oil crops that had not been a priority.

4.3.2 Lessons learned

It was evident that the knowledge and experiences regarding stakeholders was shared among the projects. The nature of stakeholder engagement and approach evolved with experience. There was also a call to be opportunistic. In Uganda, there was an attempt to influence government loan discussions with donors for financing oilseeds development. In Uganda, Zimbabwe, and other countries, there was engagement of high level government officials. For example, senior officials in Uganda and Zimbabwe were directly involved in the respective oil crops development and stakeholder consultations. This in itself gave the effort significant publicity and profile in government decision-making. Most stakeholders were also persuaded to join the

[7] They were convinced that VOPSIN, being a COMESA program, would be an important channel to air concerns about unfair trade practices in edible oils and fats in the region.

[8] A grouping of medium-scale oil seeds processors supported by USAID, whose main agenda was to promote sunflower and soybean production and processing.

steering committees (championship group) because of its high profile and government participation, which they saw as an opportunity to influence government policy.

In Zimbabwe, the Commercial Oilseeds Producers Association (COPA), an umbrella body for commercial oilseeds producers, was spearheading farmers' interests and lobbying for government policy support. Technical support from VOPSIN allowed the formation of an informal but more broadly based oilseeds council in Zimbabwe, which was given a secretariat and housed at the Ministry of Agriculture. The council included representatives from farmers unions, seed companies, animal feed millers, oilseed millers, government, and NGOs. It was chaired on a rotational basis and mainly deliberated on policy issues, crossborder trade, government regulations, and supply and demand projections for the coming seasons. The motivating factor for belonging, especially for farmers and processors, was their wish to air their views on the ongoing agricultural liberalization. Farmers wanted protection from cheap imports of soybeans from South America and price guarantees from local processors, while processors wanted to lobby for protection from cheap imports of edible oils and protein cakes from South Africa. The processors were also concerned about a South African-imposed levy on imported soya cake from Zimbabwe, while at the same time subsidizing imports of soybeans from Zimbabwe.

In implementing the VOPSIN project, COMESA was guided by the lessons and experiences from the ORN, VOPS (K), and ORCESA. Based on these lessons and experiences, VOPSIN developed the following indicators of success for its activities in each country and at the regional level:

- Knowledge generated on commodity system;
- Stakeholders and key players actively participate in and guide the process;
- Both groups deliberate on knowledge gathered and prioritize constraints limiting subsector development;
- Decisions taken on specific interventions/solutions;
- The subsector undertakes to coordinate its own development; and
- A sustainable stakeholder-led body be established and given resources, and its role clearly defined to champion the overall development of the PCS process.

During the implementation of VOPSIN, there was more freedom for each national teams of stakeholders to decide on areas of investigation without undue pressure from the project implementers from COMESA to follow prescribed project objectives. It was building on lessons gained in the ORCESA project. The COMESA project team only provided guidance. In the previous projects, there was some pressure from project leaders to adhere somewhat rigidly to project objectives. As a result of VOPSIN's flexibility, local ownership of the process was more pronounced, especially in Zimbabwe and Uganda.

The steering committees set up during VOPSIN were meant to guide national subsector diagnosis, provide an opportunity for open dialogue, and act as a channel for regional networking and information exchange for stakeholders.

The involvement of COMESA in the project was seen by some stakeholders, especially processors in landlocked countries, as a way to address what they perceived to be unfair trade

practices by companies based in the more prosperous and often non-landlocked countries (for example, Mukwano Industries in Uganda vs. East Africa Industries in Kenya).

4.3.3 Conclusions

VOPSIN endowed PCSA with a broader regional dimension and also coalesced experiences from earlier interventions in Kenya, Tanzania, and Zambia. COMESA's involvement pulled in a regional dimension to policy issues and concerns among major edible oils processors. Major oilseeds and edible oil processors in the region were attracted to VOPSIN partially because of the perceived regional stakes involved as a result of COMESA's presence. A majority of processors requested that COMESA implement fair trade practices, and were keen on monitoring VOPSIN to see whether their recommendations were indeed being addressed. The processors saw COMESA as a body with sufficient muscle to influence national and regional trade policies.

During VOPSIN, attempts were made to engage high level government policy makers (such as Zimbabwe's Minister and Permanent Secretary of Agriculture and Uganda's Presidential Adviser on Agriculture). The involvement of high profile personalities in VOPSIN activities led to the program's increased visibility and attracted a greater degree of interest from a broader spectrum of stakeholders. At the final VOPSIN workshop held in Nairobi, there was a spirited attempt by many stakeholders to attend the meeting at their own cost. A majority viewed this as an avenue to influence regional policy on edible oils and fats. One outcome of the workshop was that stakeholders felt that regional market information and policy reforms should be key to any future investment in the oilseeds subsector.

By this time, biological researchers were well aware of the ability of other stakeholder constituencies (processors, farmers, policy makers, and NGOs) to influence development work on oil crops. Stakeholders were also becoming more aware of the development benefits of greater participation in commodity development work. Donors and government had also become more sensitized on funding or promoting research work that examined the bigger picture of commodity development and the needs of its client base. This was reinforced by the then emerging participatory research methodologies which were urging inclusion of project beneficiaries in the design, planning, implementation, and monitoring of activities.

The emerging eminence of nonbiological researchers in oilseeds development work was mainly due to two factors: first, the agricultural liberalization policies touted by the IMF and World Bank; and second, the fact that for the first time, nonresearchers were being given an opportunity through IDRC-supported projects, to have a voice in the conceptualization and implementation of oilseeds development work.

The enthusiasm with which farmers and processors participated in the VOPSIN research, especially in Zambia, Uganda, and Zimbabwe, revealed the lost opportunities of the past when their participation had not been enlisted. The project ended up working with a new constituency and leaving behind the limitations of traditional research protocol. In zeroing in on different aspects of the development/constituency/process continuum, the project unearthed other potential stakeholders. The researchers were now seen as part of a bigger group of stakeholders or actors.

Farmers and processors were able to influence policy and offer candid thoughts on solutions to challenges in the sector. This was an important milestone within IDRC because it pointed out that while biological research is important, it is only one of many variables that determine policies and final effects in production and people's development. Having a better understanding of those other variables increases the impact of research. Without shifting from its central core constituency of researchers, IDRC was being challenged to take into account the interests of other decision-makers in the research it supported, so as to ultimately contribute more consciously, visibly, and effectively to development.

4.4 UFFRO Fish Commodity Economic Systems (Uganda) Project

The Fish Commodity Systems Economics (U) Project was started in June 1992. Its main objective was to analyze and provide an information base to strengthen the research capacity of the Uganda Freshwater Fisheries Research Organization (UFFRO) and thus improve the performance of the fisheries subsector. The project design followed that pioneered by VOPS (K). Initially, two UFFRO researchers underwent two-weeks of training on PCSR conducted by VOP (K) researchers at Egerton University. This course provided the UFFRO researchers a better appreciation of the concepts and skills used in the Production to Consumption System Research (PCSR) approach, for subsequent adoption and application to the fish commodity sector in Uganda.

The training emphasized the need to involve major sector participants in identifying problem areas in the commodity system and in designing subsequent steps. The training also highlighted the human and material resources required to understand and tap the knowledge, technology, and willingness of sector stakeholders. These were influenced by such factors as culture, the environment, competitiveness, and incentives.

The initial diagnostic studies found six major problems facing the fishing industry in Uganda, namely: a) fishing areas were often located far from major consumption centres and infrastructure was often poor; b) fish traders were not organized and hence were unable to lobby government or the private sector to improve working conditions; c) most traders offloaded their fish at markets which were scattered and far from fishing sites. As a result, fish traders dealt mainly in processed fish; d) most fish trade enterprises did not keep business records and had few skills to make consistent estimates of their business requirements; e) most fish traders did not have access to credit and their finances relied on the resources available to their owner operators; and; f) the policy environment was characterized by multiple taxes further reducing profit margins before sales.

Unlike the broad based advisory committee model that was used in VOPS (K), the UFFRO Fish Commodities Economic Systems Project only brought together officials from various government departments during workshops rather than entering into long-term relationships. This effort resulted more academic than the VOPS series of activities.

The project generated a large volume of data on the fisheries subsector and equipped UFFRO with a vehicle, an outboard motor, and office equipment. In retrospect, it was only after political

decisions to liberalize the Uganda economy in 1992 that significant progress was made in taking up many of the project's recommendations.

4.4.1 Conclusions

The commodity systems approach to research provides a broad spectrum of information for decision-makers to pick and choose from. This is especially critical in a rapidly changing socioeconomic environment, as was the case in Uganda following the implementation of the UFFRO project, when information generated from the project informed donor investment decisions. The most important lesson learned from this experience was that resources are critical in encouraging stakeholders to engage in discussions regarding improvements in a commodity system requires significant time and resources and that fishers are much more difficult to reach and engage in these discussions.

These observations generally fits within the "theory of stakeholder identification and salience" proposed by Mitchell et al. (1997) that highlights three stakeholder attributes that merit attention:

- Stakeholders' power to influence the sector;
- The legitimacy of a stakeholders' relationship to the firm; and
- The urgency of the stakeholders' claim on the firm.

On the basis of these attributes, the theory proposes a typology of stakeholders "to whom management should pay attention" (Mitchell et al 1997). It follows that stakeholders with two or more attributes are likely to be noticed and participate; those without them will tend to be ignored. In the context of this paper, we refer to the sector, issue, or problem situation, rather than the "firm."

When local producers lack power and legitimacy in the eyes of public authorities, they may be unable to participate or even take advantage of new laws expressly drafted to delegate authority to them. Others may have to intervene on their behalf until their capacity improves. Where power is concentrated in the hands of an elite, the process of stakeholder identification and boundary and problem definition will be distorted and manipulative. Power is the capacity to achieve outcomes.

5 PCSA and Other Production and Commodity System Approaches

5.1 Farming Systems Research and Extension

Farming Systems Research and Extension (FSRE) approaches a holistic perspective to examine links between elements of the system and explain processes and performance. FSRE was developed by multidisciplinary teams of biophysical researchers that expanded to include agricultural economists within Consultative Group on International Agricultural Research (CGIAR) and other centres, such as CATIE in Latin America, and Los Baños University in Asia, in the mid-1970s. It integrates skills in biological and social sciences so that problems are perceived in a socially and technologically appropriate sense. It is particularly useful in agricultural development by addressing the problem of developing and using new agricultural technologies. FSR initially ignored marketing but has evolved to integrate it. FSRE does not focus attention on a specific commodity unless the farms of interest happen to be a monoculture production system. A variety of interdisciplinary methodologies, for example, Rapid Appraisal Methodologies, have been developed within the FSRE context, which are also useful in PCSA.

FSRE centres on the farmer's decision-making process but does not consider fully consumption and market factors or the policy environments that influence such decisions. It describes resources used, crops grown, livestock kept, and quantities produced and consumed. It also requires specifications of farmer aims and objectives.

PCSA offers a glimpse of the connections in a targeted farming system with its environment along the market processes and actors associated with a given commodity that also constitute the farming system. PCSA is also complementary to FSR in that it permits a look at the entire production chain beyond the farmers' domain and into the people and institutions involved, their interests, motivations and concerns. The interests and actions of these external stakeholders become important in the farmers' decision-making process.

5.2 Sector analysis

Sector analysis is based on the theory of industrial organization and offers a rationale for PCSA. Sector analysis looks at the different channels through which a commodity flows, from production to consumption (vertical links between different players in a commodity). It describes key elements of the sub-sector and identifies key constraints to better performance. PCSA calls greater attention to the groups behind the flows and processes of sub-sector operations. Sector analysis can be useful in designing policies and projects to overcome identified constraints. Sub-sector analysis comes closest to embracing PCSA concepts. In undertaking the sub-sector diagnoses, PCSA practitioners applied sector analysis principles. Application of sector analysis is critical to PCSA practitioners because it helps in understanding the different channels and processes through which a commodity flows. Such understanding is critical in understanding the critical constraints facing the commodity system, identifying the main players in the commodity system and understanding the policy and technological constraints to the commodity development. Sector analysis can also help PCSA practitioners in

understanding the influence of different industry players on the behaviour and conduct of the industry.

5.3 Market research

Market research uses a variety of methods of analysis, some of which are theoretical, descriptive, or diagnostic to determine the competitiveness and efficiency of a marketing system. They also use sector analysis perspectives and tools. Market research aims to identify consumer needs, market segments, and the purchasing process to minimize uncertainty in making market decisions. Market research is a useful tool in determining supply and demand conditions for a commodity and the price levels at a given time, the factors that influence supply and demand, the process of price determination, market size, players, and type of market (competitive, monopoly, etc). In market research one is also concerned about the influence and interests of the participants along the market chain.

Market research results can be used to make investment and policy decisions, and gage the competitiveness of the market. PCSA also employs some of the concepts and tools of market research. A sound understanding of marketing research for a target commodity can help PCS practitioners make informed decisions on the nature of the demand of a commodity, which can then be used to influence investment or research decisions at the production level. For example, a good understanding of market demand will inform researchers on the type, quality, and quantity of commodities "desired" by the market. This can help them in design of research programmes that are clearly client driven and enhance the chances of adoption and utilization of their research results. Market research can also help PCSA practitioners to identify the various players in the marketing systems, their concerns and influences.

5.4 Commodity chain

Commodity chain analysis is concerned with commodity transformation, aggregation, desegregation, and distribution. It is a variant of sector analysis. It can be used to understand how the commodity changes along the chain and in this way identify opportunities and constraints along the commodity chain. It can be useful in assessing market efficiency, structure, and performance. It can also be useful in understanding necessary investment decisions to make marketing more efficient. In studying the commodity chain, one may also make reference to individuals and firms involved in commodity transformation and their potential influence on the performance or efficiency of commodity transformation. PCSA practitioners can benefit from commodity chain analysis tool, to understand how the commodity moves along the chain.

5.5 Value chain

Value chain analysis looks at the steps of commodity transformation, aggregation, desegregation, and distribution. It is a variant of commodity chain analysis but is concerned more with understanding the value addition and distribution of benefits among the players along the

commodity chain. Understanding how the commodity changes and gains value along the chain can help identify opportunities and constraints along the route and so obtain maximum value. It is another variant of sector analysis. Value chain analysis can be useful for identifying investment opportunities in marketing/distribution and processing that can transform commodity performance at any point along the chain. Value chain analysis can also be used to identify opportunities for policy-making. Value chain analysis can also be useful in understanding inefficiencies and constraints along the commodity chain that would be of use to PCSA practitioners.

5.6 Stakeholder analysis

Stakeholder analysis is used to identify groups of people that form the relevant constituency of a commodity subsector, and to learn about the interests of stakeholders individually or as groups, and the effects of such interests. It can be used to assess how different interests and expectations unite stakeholders to achieve a common goal. It can also be used to discover patterns of stakeholder interaction and therefore provide options for improving the level and outcome of those interactions. Stakeholder analysis can also be used to discover potential areas of conflict between stakeholders and thus, hopefully, ways to avoid such conflicts. Stakeholder analysis is therefore complementary to and a useful tool for the PCSA.

Stakeholder analysis can be used as a precursor and in preparation for full participation of stakeholders in the life of a project, therefore improving its sustainability. Stakeholder analysis also allows strategic participation and project development decisions on the basis of such participation. However, stakeholder analysis has its limits in that it cannot be expected to solve all problems or guarantee every stakeholder's representation (Grimble and Wellard 1996).

6 Best Practices to Improve PSCA Objectives

The PCS approach is a tool to identify sources and types of demand for technologies and policies that will improve the performance of an agricultural commodity. It implies the application of a comprehensive system perspective to visualize the structure, behaviour, and performance of the Production to Consumption System (PCS) associated with a targeted commodity. The target PCS is constituted by the groups of people, the resources and processes they command, and the interactions among themselves and with the environment that affect the production, processing, storage, movement, trade, and final utilization of a commodity (Navarro 2002). In the case of agricultural commodities, the focal PCS intersects with one or more farming systems (FS) at its on-farm[9] production and related stages. This intersection highlights the interdependence and complementarity between the PCSA and the Farming Systems Research and Extension (FSRE) approach and related on-farm or community-based work.

From the Farming Systems Research, PCS can borrow aspects of understanding better the overall farming enterprise and the non-farm activities that influence labour and resource allocation in farmer decisions.

In its present state, PCS incorporates many aspects from both the market research and commodity chain approaches, as well as from the value chain. However, the PCS tools for identifying opportunities for investment and policy interventions can be further enriched by borrowing the concepts of aggregating and disaggregating the steps of product transformation as applied in the value chain approach. In the case of vertical transformation of a commodity system, PCS intersects with more contemporary sector analysis approaches such as value chain analysis, commodity chain analysis, and market research analysis. Although a variant of sub-sector analysis had been done on oil-crops in Zambia before the implementation of the IDRC supported VOPS (Z) project, it failed to elicit the public debate that was generated by the VOPS (Z) project. This was largely because the study ignored the participation of the many stakeholders along the chain. There was also lack of follow-up in terms of implementation of the recommendations made in the sub-sector analysis report, because the implementers failed to create ownership of the whole process, and therefore ownership of the outcome was missing. PCSA tried to overcome this by including stakeholders in the research decision-making and implementation process in all the countries in which it was applied.

From stakeholder analysis, PCS can borrow the more refined concepts and tools for the identification of stakeholders on the basis of their attributes, interrelationships, and interests. In any commodity system, each group of stakeholders has its own concerns, expectations, and priorities that need to be taken into account before intervening in the sector and to intervene in meaningful ways that will be supported and hopefully driven by stakeholders. Certainly, each of the stakeholders' interests and derived actions will have a direct or indirect impact on the commodity system and therefore on the interests of other stakeholders in the chain, which may also lead to conflicts and which, in turn, proper stakeholder analysis can help minimize.

[9] Or the commune as in the case of communal areas.

To a great degree, more refined stakeholder analysis was missing in the oil crop research reviewed and its inclusion is necessary to make the PSCA more effective an intervention tool and improve performance in a PCS. A solid appreciation and utilization of stakeholders' analysis should help to identify early potentially competing and complementary interests and therefore facilitates their alignment through focused dialogue among the different stakeholders to achieve collective goals. For example, in Zambia, when OILS was formed, the Zambian researchers were concerned about the long delays in releasing improved oilseeds varieties and the poor adoption rates of the released varieties. Farmers were concerned about the low prices being offered by local processors, while the processors were concerned that the prices demanded by farmers were uneconomical in a country where edible oil prices remained under government control. Certainly, in the case of Zambia, better knowledge and application of stakeholder analysis concepts/tools would have helped. Sector analysis studies need to be complemented with stakeholders analysis and participation to achieve ownership and eventual results utilization.

In Kenya where an Advisory Committee was established, a key omission in the makeup of the group was the absence of a representative of the Ministry of Finance, which had clout in most of the policy areas of concern to the group. Small-scale farmers were equally unrepresented. Even the private sector representatives did not truly represent their constituency, as there was no association to nominate a representative. VOPS (K) considered private sector representatives as those who held some power in the sub-sector.

A better understanding of stakeholder analysis by VOPS (K), AGREF, PTA/COMESA, VOPS (Z) and VOPS (T) could have resulted in a more balanced and perhaps more legitimate and sustainable lobby groups. In understanding and applying the principles and tools of stakeholder analysis, researchers will know better how to identify and involve relevant stakeholders in their research planning, priority setting, implementation, and monitoring. A thorough understanding of different stakeholders is critical for making the right research decisions. Research in this case will not be done as an end in itself but to address focused stakeholder constraints and contribute to better performance of the sub-sector (commodity system).

Integrating these concepts from stakeholder analysis into the PCS would help researchers reconcile seemingly unrelated issues such as developing low cost production technologies that enable farmers to earn profits while offering processors the same commodity at lower prices. Such technology would be widely adopted because it addresses real issues that are of concern to the two most important stakeholder groups within the commodity system. This approach responds to the ideal of win-win solutions.

The experiences of IDRC and its partner institutions in implementing PCSA on oil crops suggests that the rules that deal with stakeholder involvement need to be more flexible, resilient, and adaptive in defining stakeholders, boundaries, and problems. One of the main objectives of the oil crops supported projects was to establish a championship group to maintain the overall PCS comprehensive view and to foster the research and related interventions required to improve and sustain sub-sector performance.

The establishment of the groups was, however, done without developing a clear definition of the composition of the group and what it would take to keep it working united. The championship

group was envisioned as a grouping of representatives of different stakeholders. Because there were no organized groups/associations representing stakeholder groups, members of the champion group often represented their own, rather than a group interest. In the case of VOPSIN, national team leaders were asked to establish task forces without a clear definition of their composition and nature or how to make them work.

In implementing the PCS approach in IDRC-funded projects, implementing agencies identified and used linking institutions in each of the target countries. These institutions became the conveners of the oil crops research work. They were selected on the basis of their considered interest or stake in the oil crops sector. For example, in Kenya, Egerton University was designated the convener, as was TFNC in Tanzania, OILS in Zambia, the Ministry of Agriculture in Uganda, the Ministry of Agriculture in Zimbabwe, and Chitedze Research Institute in Malawi. Overall, only OILS was a legitimate stakeholders group, but it lacked experience and resources and had no personnel or offices of its own.

In the ORCESA and VOPSIN projects, the implementers looked for neutral (non-partisan) institutions to act as conveners. This was considered important in order to ensure a broad consensus among different stakeholders. The selection of neutral conveners was also based on the fact that industry players were more likely to give information to neutral institutions, rather than groups they regarded as competitors more likely to leak confidential company information.

These were noble approaches, which could have benefited from a better understanding of stakeholder analysis tools.

Based on the findings of this review, the weaknesses in the projects that used PCS were attributed to misunderstanding the interests of stakeholders by the implementing agencies on the one hand, and mere lip service to stakeholder priorities on the other. Consequently, projects ended up addressing issues of secondary concern to the stakeholders, eventually losing their interest.

Stakeholder analysis tools provide approaches to stakeholder identification and understanding of individual interests and concerns, which could form the basis for strategically establishing a commodity sector championship group to help researchers define a relevant research agenda. Here PCS can borrow mainly from more recent stakeholder analysis theory that improves understanding and identification of stakeholders in a commodity system of a research program/project.

According to Freeman (1984, p. 64), the challenge of stakeholder identification is complicated by what he calls the "congruence problem." "Analyzing stakeholders in terms of an organization's perception of their power and stake is not enough. The congruence problem has to do with the assumptions an organization makes about its stakeholders, about how it interacts with them, and on what basis it is willing to negotiate with them. At the outset we indicated that many times in a PCS efforts the stakeholders did not even identify with each other and at times interacted only in a competitive mode. Information sharing and awareness creation would help them to get to know better their mutual interdependences and align their interests and thus deal with this issue of congruency.

Stakeholders' attributes, such as power and legitimacy, help explain the odds of a stakeholder becoming a convener or a facilitator, or in PCS terms, a champion. With regard to the time element, or *urgency*, some authors suggest that avoidance of urgency on the side of the facilitator or champion is a key component to successful conflict management (Thomas et al. 1996). An organization may be able to convene others temporarily; thereafter, however, the stakeholders will decide on the role and desired attributes of the convener and on specific functions for other neutral parties, such as facilitators, who may become providers of expert information. This was observed in Kenya, Tanzania, and Zambia where stakeholders had developed alternative mechanisms to pursue their common interests after the IDRC-supported project ended.

This proposition is particularly relevant for all the institutions and projects that assumed they had the power and legitimacy to convene stakeholders. Much of the literature on stakeholder analysis fails to question this assumption and seems to be directed predominantly at those groups or agencies who seek to convene and assume they will control a project (Warner and Jones 1998). The result was often the imposition of urgency, as a result of administrative deadlines imposed by a distant head office. It is argued here that a convening organization can gain legitimacy by openly acknowledging its own limitations as a convener. For instance, stakeholders in Tanzania and Zambia cited this as a major weakness of AGREF.

The ability to convene a wide range of stakeholders requires a convener with widespread recognition and impartiality. In Kenya, Egerton University was the convener and whereas the institution had legitimacy, it lacked the power to change the policy environment. Over time, some of the stakeholders perceived that it also lacked neutrality. In Tanzania, the TFNC lacked both power and neutrality and therefore most private sector stakeholders perceived it to lack legitimacy in spearheading positive changes in the sector. In Zambia, whereas OILS possessed both legitimacy and urgency, its credibility was eroded when members felt that their interests were no longer a priority for the organization. These three case studies suggest that government organizations need a third-party convener with a reputation as a legitimate, neutral, multi-actor organization, even though the government organizations may have had the power and urgency to convene on their own.

In conclusion, any group or organization seeking to convene other stakeholders should first analyze its own role and objectives and its relationship with the stakeholders it seeks to invite.

7 Sustainability, Equity, and Efficiency within the PCS Framework

According to Todaro (1986) in the 1970s began a remarkable change in public and private perceptions about the ultimate nature of economic activity. In both rich and poor countries there was growing disillusionment with the idea that the relentless pursuit of growth (efficiency) was the principle economic objective of society. In the developed countries, the major emphasis seemed to shift toward more concern for "quality of life" (balanced equity, efficiency, and sustainability). In poor countries, the main concern focused on the question of growth versus income distribution (equity). Many poor countries had experienced relatively high growth rates but this did not lead to improved standards of living for the poor. Today, development encompasses balancing growth, equity, and sustainability in the production and utilization of goods and services. The following section briefly addresses the simultaneous incorporation of sustainability, equity, and efficiency elements into and improved PCS framework, as required to improve the access, utilization, and enjoyment of natural resources by people in the pursuit of food, health, employment, and income security.

This Todaro (1986) study explored the pursuit of the goals of equity and sustainability as ways to support social well-being and environmental integrity through the development of a truly long-term social, economic, and ecological infrastructure, one which promotes social justice and equality. The challenge to make more popular and visible these concerns about equity and sustainability is a complex one. We need to understand the institutional roots and the social sources of social inequities and their links with environmental and natural resources management and in particular their degradation

Sustainability

Sustainability is the most important concern in all development programs. The response to the sustainability concern implies that every development intervention or decision must be taken in awareness of its long-term impact on present and future generations directly or through effects on the environment. Ultimately, sustainable development interventions are those that benefit society through economic, social, and institutional arrangements that allows society to continue to derive benefits even after external support is withdrawn. In addition, sustainable development interventions must be commonly replicated or adapted. To achieve this, it is important to ensure a buy in by the target communities and to do research in a way that the community and its future generations benefit. One has to understand that individual desires maybe in conflict with community future prosperity or overall development agenda. For example, importation of palm oil into the economies of Eastern Africa would benefit consumers by ensuring access to cheap edible oils and fats. The refining industry owners would also reap profits. However, this is all undertaken at the expense of the many potential oil crops producers who could benefit by producing and selling to the processing industry, leading to creation of employment and wealth that can sustain the purchasing power to the population. Given that the areas with potential for oil crops production in the region also have medium to low potential for production of other crops, lack of income opportunities from oil crops could drive those communities to engage in less fitted commodities or other environmental destructive ways of earning incomes such as charcoal burning.

Sustainability of the importation of palm oil could also be questioned on the basis of lack of adequate foreign currency resources in most of the countries in the region. These imports can only be sustained at the expense of other more important income generating opportunities thus depressing economic growth.

Equity

The projects reviewed in this study suggest that multi-stakeholder negotiation is neither possible nor desirable for powerless groups. Weak, disenfranchised stakeholders stand to lose much from negotiations where power differences are too acute to enable collaboration. For instance, small-holder farmers and small-scale processors were found to be among the weak groups that were difficult to incorporate into the stakeholder forums and whose interests were easily ignored. To enable weak groups to participate effectively, there is need to empower them before they can engage in negotiations. Nevertheless, all stakeholders stand to benefit when the negotiation playing field is transparent, so that the decision to venture into a negotiation is based on reliable information.

Stakeholder analysis can therefore be used as a stepping-stone toward agreements on collaborative management of natural resources (a sustainability issue). "Co-management" provides negotiated options to move forward in the context of conflicting interests, in an age of pluralism and new patterns of local governance. Collaborative management seeks to build on locally agreed-to approaches in an adaptive, progressive manner. One desirable outcome of collaboration is that it yields agreements on ways to move forward that emerge from interaction among stakeholders, rather than being imposed from outside (Engel 1997; Holling et al. 1998; Röling and Jiggins 1998).

Stakeholder analysis tools are commonly used within most collaborative planning processes. In such instances, they are best described as a set of analytical tools embedded in collaborative or negotiation methods. On the other hand, stakeholder analysis moves to centre stage as a method when it is used to plan an intervention or to understand and analyze a complex situation (Burgoyne 1994; Grimble et al. 1995; ODA 1995; Grimble and Wellard 1996) In such cases, it is common to find stakeholder analysis combined with other planning and appraisal methods that are based on systems thinking and that seek to embrace complexity and the interrelated parts, such as collaborative learning (Daniels and Walker 1997), RAAKS (Engel and Salomon 1997), collaborative management (Borrini-Feyerabend 1996), and PRA (Ramírez 1997).

Issues of gender equity should also be considered in program design, research, and development. This can be achieved through wider consultations and background information on potential gender effects of any research or development program. Failure to address gender issues can lead to gender lobbyists challenging the project. In addition, those feeling disfranchised among the gender divide are likely to oppose the program and hence lead to its failure and lack of sustainability. Gender analysis would also inform, PCS practitioners of any need to focus their research agenda on particular groups of the gender divide. For example, if in a particular community cassava production is a preserve of women and children, it is important for researchers to make this discovery early enough so that they can research for technologies that are best suited for women and children. Gender equity is therefore a critical consideration in program design and implementation.

Efficiency

The PCS theory underpins the need to apply resources efficiently by avoiding duplication, which can result from poor stakeholder consultations and lack of prior understanding of a commodity sector. The idea of an incremental approach in which future research design is based on past analytical information ensures that resources are applied only to areas that are deemed to be a priority. Stakeholders can play an important role in research agenda prioritization. The FSR and stakeholder analysis can contribute greatly to understanding a commodity system and the underlying concerns and expectations of the relevant stakeholders, and lead to an efficient application of resources. Market analysis and value chain analyses, provide the understanding of the consumer demand, taste, while at the same time unlocking the inefficiencies, which may affect commodity development. The combination of these tools is critical in ensuring efficiency in production, transformation and final utilization of a commodity. For example lack of understanding of consumer needs, may lead to research in varieties or commodities that may not have much demand in the market place; taste and colour could a major consideration in consumer demand for cassava, while a biological research may be driven by the desire to breed for disease resistance, higher yielding, early maturing varieties, which may not necessarily be of any consumer use. Efficiency here could mean applying resources in a way that maximises consumer benefits.

Greater economic growth and benefits to the wider community/constituency of stakeholders can be achieved through prior stakeholder analysis, which improves the chances of adoption and /or adaptation of research results.

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Table 1: **Analytical Matrix of IDRC Oil Crops and PCSA-related Projects**

Project Title	Project Period (When)	Stakeholders involved and method (Who/How)	Rationale for inclusion of stakeholders (Why)	Concerns of Stakeholders	Lessons learnd
Oilseeds Network	1981-1992	Researchers – plant breeders, agronomists, pathologists, and entomologists. Principle methods used: newsletter, visits, conferences, joint experiments.	Networking, germplasm exchange, information sharing, training.	Yield improvement, disease and pest resistance, adaptability to different AEZs and knowledge generation.	Project outputs restricted to development of new varieties. Researchers not sure of development effects of new varieties. Research design did not have a mechanism for measuring impact on intended beneficiaries. No input from other stakeholders.
VOPS(K)	1988-1996	State universities, MoA, MoI, MOLD, MPND, processors, seed company, research institutes, farmers, Methods of engagement: Diagnostic subsector studies, broadbased steering committee established (representatives of above including farmer representatives), workshops, lobbying key stakeholders, newsletter.	Complement multi-disciplinary and multi-institutional collaboration in research. Identified constraints were crosscutting that needed interventions from multiple stakeholders.	Private sector desired immediate results and felt that cost of local production was too high relative to imports. Lack of clear crop policy. Some stakeholders held other in contempt. Key government departments were not engaged in the stakeholder group which reduced effectiveness in influencing policy.	Stakeholders need to find benefits from engaging in process, otherwise they leave. The champion/convenrr must demonstrate neutrality and command respect of stakeholders. Champion should anticipate the dynamics of the subsector and respond appropriately. Different institutions have taken up elements of the PCSA and there is greater awareness of the need for stakeholder involvement.
ORCESA	1992-1994	Covered Tanzania and Zambia MoA, processors, research institutes, feed millers, NGOs, farmer associations, regional trading	Complement multi-disciplinary and multi-institutional collaboration in research and policy change. To identify crosscutting	Private sector desired immediate results and felt that cost of local production was too high relative to imports.	There was obvious suspicion between supposedly competing stakeholders and this led to withholding of information and openness in discussions.

Project Title	Project Period (When)	Stakeholders involved and method (Who/How)	Rationale for inclusion of stakeholders (Why)	Concerns of Stakeholders	Lessons learnd
		organization, VOPS(K) Methods of engagement: Diagnostic subsector studies, Broadbased steering committees established (representatives of above including farmer representatives), workshops, lobbying key stakeholders, and information sharing. Facilitation of germplasm exchange of high oil yielding soft-shelled sunflower seed. Researchers from the two countries were trained in PCSR approaches at Egerton University.	issues that needed interventions from multiple stakeholders. Share knowledge and information about the subsector. To achieve broadbased consensus on priority areas for improving the performance of the subsector. To form a credible lobby group capable of influencing government policy and to chart out development programs for subsector.	Private sector was concerned about the lack of policy support for the subsector. Cheap and sometimes contraband imports through neighbouring countries. The effort would turn out to be another endless round of research without tangible benefits to the private sector.	There were high expectations for immediate solutions to existing problems.
VOPSIN	1994-1997	Covered Uganda, Malawi, Zimbabwe, Tanzania and Zambia. Processors, seed companies, NGOs, Ministry of Trade and Industry, Agriculture, Research Institutes, Farmers Unions, Universities etc. The method of engagement was informal oilseed	Complement multi-disciplinary and multi-institutional collaboration in research and policy change. Identified constraints were crosscutting that needed interventions from multiple stakeholders. To achieve broadbased	Private sector desired immediate results and felt that cost of local production was too high relative to imports. Farmers considered these forums as opportunities to bargain for higher commodity prices.	Resources and time available for the exercise were inadequate to achieve the necessary cohesiveness among the stakeholders. Effective champion needs to be backed with thorough understanding of the subsector along with the needs and interests of the stakeholders. Political/policy goodwill from

Project Title	Project Period (When)	Stakeholders involved and method (Who/How)	Rationale for inclusion of stakeholders (Why)	Concerns of Stakeholders	Lessons learnd
		council, workshops, visits, steering committees, surveys and information sharing.	consensus on priority areas for improving the performance of the subsector. To form a credible lobby group capable of influencing government policy and to chart out development programs for subsector.	Processors wanted an opportunity to influence government policy on imports of raw materials. Farmers, processors, and ministries saw this as an opportunity to get COMESA to help in getting fair trading practices with member states. Market rivalries tended to spill over into the forums.	government is critical to achieve an effective championship group by conferring credibility to the group. Lack of government vision for the sub-sector undermining opportunity for coherent and coordinated efforts. There is need for a committed, knowledgeable and respected champion to guide championship group.

Table 2: **Analytical Matrix Contrasting PCSA and Other Systems Analysis Models**

System	Concepts	Intention	Effects
Production to Consumption Systems Approach (PCSA)	Emphasis on key human decision making groups. Visualizes structure, behaviour, and performance of the commodity system. Uses stepwise incremental approach to build the necessary knowledge about the sector. Promotes the establishment of a sustainable human organization.	Identify and capture opportunities to improve sectoral performance. Identify key intervention points and interest groups, their expectations, concerns, and organization. Build and update knowledge about the commodity system. To update information on the sector, as well as maintain cost-effective research and related interventions.	Their potential contribution to improving sectoral performance. Individual or teams of researchers would be able to draw freely from such sector knowledge and human base to improve their ability to design, obtain support for and deliver results from their research efforts.
Farming Systems Research and Extension	Incorporates interaction of a commodity system with other farm enterprises. Centres on the farm's decision-making process but does not consider consumer and market factors or the policy environment facing the commodity. PCSA permits a glimpse into the environment surrounding the FS with which it intersects and along the transects formed by the people and the processes involved after the on-	Understand labour and other farm resource allocation decisions.	To improve technological uptake by the farmers based on resource availability.

System	Concepts	Intention	Effects
	farm production stage. PCSA also provides information that is useful to FS practioners to understand how farmers make decisions about what to farm, when and why.		
Sector Analysis	Looks at different channels through which a commodity flows, from production to consumption (vertical links between different players in a commodity). Describes key elements of the subsector and diagnoses key constraints to better performance.		To indicate policies and projects to overcome the identified constraints.
Market Research	To determine supply and demand conditions for a commodity and the price levels at a given time. To determine the process of price determination, market size, players, type of market (competitive, monopoly, etc).	To make investment decisions, policy decisions, measure competitiveness of the market.	To improve the quality of investment, policy, and marketing decisions.
Stakeholder Analysis	To identify stakeholders. As a management tool in policy-making. It is an assessment of stakeholder interests and ways in which those interests affect project risk and viability.	Empirically to discover existing patterns of interaction. Analytically improve interventions. To learn about and learn from stakeholders. To predict conflict. It is a precursor and a preparation for full stakeholder participation in the project life.	To improve project sustainability. To make strategic participation and project development decisions on the basis of that knowledge.

System	Concepts	Intention	Effects
Commodity Chain	Looks at transformation of a commodity from production to final utilization.	Understand how the commodity changes along the chain and in this way identify opportunities and constraints along the commodity chain.	To make investment and/or intervention decisions.
Value Chain	Looks at the steps of commodity transformation, aggregation, disaggregation, and distribution.	Understand how the commodity changes along the chain and in this way identify opportunities and constraints along the commodity chain.	To make investment decisions. To identify interventions that could transform the commodity performance at any point in the chain.

Table 3: Contrast between PCSA and Other Approaches.

	FSR	Sector Analysis	Stakeholder Analysis	Market Research	Commodity Chain	Value Chain
PCSA	PCSA permits a glimpse into the environment surrounding the FS with which it intersects and along the transects formed by the people and the processes involved after the on-farm production stage. PCSA also provides information that is useful to FS practioners to understand how farmers make decisions about what to farm, when, and why.	The Sector Diagnostic Studies conducted under PCSA constitute large elements of sector analysis. Sector Analysis does not concern itself with the interactions between stakeholders along the commodity chain. Sector Analysis does not consider the incremental approach which is central to PCSA. Sector Analysis does not recognize the role of a champion to push the agenda identified in the analysis unlike PCSA which recognizes that changes need championship.	Stakeholder Analysis has refined the tools for stakeholder identification. It does not classify them, unlike PCSA which categorized stakeholders into three categories: primary, secondary, and key players.	All elements of market research are used in PCSA. However, market research does not emphasize stakeholder analysis or participation. It is a one-time snapshot of the market (lacks incremental approach).	Commodity Chain is a subset of the PCSA and does not entail stakeholder involvement. It is a one-time snapshot of the market (lacks incremental approach). In the PCSA, stakeholders are involved in driving the process whereas the Commodity Chain is researcher driven.	Value Chain is a subset of the PCSA and does not entail stakeholder involvement. It is a one-time snapshot of the market (lacks incremental approach). In the PCSA, stakeholders are involved in driving the process whereas the Value Chain is researcher driven.