C I A T

PROJECT 19

METHODS OF FARMER PARTICIPATION IN RESEARCH AND GENDER ANALYSIS FOR TECHNOLOGY DEVELOPMENT

Activity Report
1996

Contributors

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Project #19 Methods of Farmer Participation in Research and Gender Analysis for Technology Development

Objective To develop apply and disseminate participatory methods and principles of organizational design which improve feedback from end users of research to scientists at early stages in R&D and which promote low cost sustainable institutionalization of the approach by NARS

Outputs Widely applicable methods to involve users in the development of technology for crop production and natural resource management and to develop institutional models for conducting client oriented research at the farm and landscape levels

Gains Users will be involved at early stages in decisions about technology design Methods will be available for incorporating users preferences Participatory research will be applied on a routine basis in CIAT programs At least three major universities in Latin America will have the capacity to teach participatory research methods including gender analysis At least 1 000 trainees and 40 trainers will be able to teach these methods in the region Training materials and methodology will be published and widely disseminated The contribution of participatory research to rates of technology adoption will be measured in a target area

Duration 5 years

1996	Courses offered on methods in at least six Latin American countries with replication of CIAL institutional model
1998	Methods introduced to NARS plant breeding IPM and research management research in at least six countries
2001	At least 40 trainers prepared gender differentiated adoption impact assessed in economic terms methods disseminated worldwide

Users This work will benefit poor rural men and women farmers processors traders and consumers especially in fragile environments Researchers will receive more accurate and timely feedback from end users about the acceptability of production technologies and conservation practices Research and planner will profit from methods for conducting adaptive research and implementing policies on natural resource conservation at the micro level

Collaborators Regional training in at least four countries—Condesan PROCIANDINO NARS NGOs universities National level training with NARS in at least two other countries—Cornell University (USA) NORAGRIC University of Guelph (Canada)

CG system linkages Program 11 (70%) Program 9 (30%)

Project #19 Methods of Farmer Participation in Research and Gender Analysis for Technology Development

Project purpose

To develop apply and disseminate participatory methods and principles of organizational design which improve feedback from end users of research to scientists at early stages in R&D and which promote low-cost sustainable institutionalization of the approach by NARS

Outputs

Assessment of prototype NRM technology for acceptability to farmers

Activities

- Link indigenous experimentation with formal research through regular innovator workshops with farmers and other watershed stakeholders on design of natural resource conservation practices
- Evaluate with users the acceptability of component NRM technology and prototype production systems
- Conduct strategic research on methodology development for farmer participation in IPM system (linked to IPM systemwide initiative)
- Develop methodology for participatory system trials at the landscape scale with groups of stakeholders
- Determine criteria for acceptability of new components and systems

Assessment of germplasm for acceptability to farmers with participatory plant breeding

- Develop participatory plant breeding strategies and improve the quantitative analysis of farmer preference data
- Provide methodological support and training for participatory evaluation of genetic resource breeders nurseries segregating populations and advanced lines
- Derive farmers criteria for acceptability of new germplasm and ensure regular feedback from farmers to plant breeder

New methodology and institutional models for participatory research in agriculture and NRM

- Select and test suitable methods for
  - Typologies of users or stakeholders differentiated by well being (poverty) and gender
  - Problem diagnosis goal setting by different types of users or stakeholders at landscape scale
  - Local level participatory monitoring of sustainability indicators
  - Conflict resolution
- Conduct strategic sociological research on the impact of novel organizational models on social capital formation and technical innovation in agriculture and NRM determine implications for participatory research
- Develop data collection and analytic methods for linking participatory diagnosis technology evaluation and gender analysis to GIS databases to identify patterns across agroecosystem type of technology and user groups (linked to ecoregional research)
- Monitor and evaluate the evolution of the CIAL methodology as this is disseminated to NARS in at least six countries through training assess the costbenefits and impact of CIALs
- Publish results and develop training material

Improved capacity to conduct participatory research and gender analysis

- Convene international workshops and seminars on experience with FPR in different fields
- Conduct or facilitate in house training on participatory research methods and gender analysis for CIAT staff
- Contribute to workshop courses and seminars of CIAT projects
- Institutionalize capacity to teach the CIAL methodology with partner institutions (especially universities) in four to six sites by conducting course follow up training and training of at least 40 trainers
- Feed results into development of publishable newsletter materials

METHODS OF FARMER PARTICIPATION IN RESEARCH AND GENDER ANALYSIS

November, 1996

OVERVIEW

Progress in achieving the project s objectives has been achieved in three main areas this year in the dissemination of the CIAL methodology through training and monitoring of the CIALs supported
by the W K Kellogg Foundation in the development of institutional models for user participation in community based planning and management of natural resources and in the development of a CGIAR systemwide program for which CIAT is the convening Center

THE CIAL METHODOLOGY

The project has achieved its goal of offering courses on methods in at least six Latin American countries by 1996 with replication of the CIAL (Local Agricultural Research Committees) institutional model A description of the training approach is given in Annex 1 Over 65 organisations mainly NGO s have taken part in the first phase of training and have formed CIALs in the process in addition in Honduras and Nicaragua partner institutions have been identified to take responsibility for providing future training The second phase of training the preparation of trainers drawn from the first waveof trainees will begin in 1997

Over 163 CIALs now exist in Colombia, Ecuador Peru Bolivia Honduras Nicaragua and Brazil The project designed an instrument for evaluating the institutional development of CIALs and has applied it in Colombia and Brazil to date The questionnaire discriminates features of the CIALs which are correlated with institutional sustainability which can be monitored over time An impact assessment study will be initiated in late 1997 in the most mature sites

INSTITUTIONAL MODELS FOR NATURAL RESOURCE MANAGEMENT

The development of watershed user associations is seen as an important contributor to the adoption of participatory approaches to land use planning and the use of decision support systems being developed by CIAT s hillside project Assessment of the participation in the CIPASLA model of the poorest members of the watershed showed that this had been partial in the early stages of the formation of the Association leading to problems due to partial stakeholder representation Research conducted in 1995 concluded that a stakeholder approach to organising watershed associations might help to remedy this situation (see Ravnborg and Ashby 1996) As a result in 1997 a stakeholder approach was tested at a microwatershed scale to assess the effects on participation in planning evaluation of technologies and eventual uptake of these by the different types of stakeholder Findings are reported in Annex II

IMPROVING CAPACITY FOR PARTICIPATORY RESEARCH AND GENDER ANALYSIS WORLDWIDE

One of the objectives of this project is to introduce participatory methods and gender analysis to NARS plant breeding IPM and resource management research To do this efficiently it is important to pool the experience of the relatively few practitioners worldwide who discriminate between participatory methods used in an extractive manner to inform outsiders (eg participatory rapid appraisal is often used in this way) and participatory methods used to build capacity of the rural poor to plan and implement their own R&D The systemwide initiative launched successfully in 1996 aims to bring this latter type of expertise together drawing on the IARC NGO GRO as well as NARI and University based practitioners in the field Annex III provides the proposal prepared in the systemwide planning meeting held at CIAT in September 1996 to prepare the proposed plan of work for the program Also in Annex III is the list of participants at that meeting who are the members of the systemwide program

Prior to the planning meeting an international seminar on the topic of Participatory Research and Gender Analysis for Technology Development was held at CIAT in which the participants presented papers on opportunities for methodology development in the field Proceedings are forthcoming in December 1996

ANNEX I

TRAINING IN THE CIAL METHOD

TRAINING STRATEGY

Phase I

A preliminary group of research and extension workers coming from participating insti tutions in several countries receive training from IPRA on the CIAL Methodology They create CIALs on training grounds called focus sites with participation from universities research centers NGOs and local farmer organizations IPRA supports and monitors this process reinforcing training through field visits

Phase II

Based on their performance some participants receive further training and build capacity in CIAL methodology in their own countries IPRA develops and provides training materials regularly Trainees prepare and develop their first training events in a team teaching approach with IPRA They become facilitators (trainers) of the CIAL Methodology diffusion process

Phase III

IPRA gradually decreases direct participation in training events assuming mainly a monitoring role The new trainers assume the diffusion of the CIAL Methodology through the capacity now installed in their own country organizations

Table 1 Training Courses on CIAL methodology 1996

Date	Country	Place	# of Participants	# of organizations
To create focus sites				
February 6 24	Honduras	Tegucigalpa	19	15
April 15 26	Colombia	Cali	35	15
May 9 24	Ecuador	Quito	25	17
July 1 11	Nicaragua	Managua	17	10
August 22	Bolivia	Cochabamba	18	8
Other courses				
March 4 10	Brazil	Cruz das Almas	35	12
May / Sep	Colombia	Florenc /Turipana	50	6
Total			199	83

THE CIALS EXPANSION

YEAR	LOCATION	NUMBER OF CIAL
1990	Colombia (pilot area)	7
1991	Colombia	18
1992 3	Colombia	32
	Ecuador	7
	Peru	5
1994	Brazil	19
	Colombia	10
	Bolivia	5
	Peru	5
1996	Brazil	7
	Honduras	28
	Ecuador	4
	Nicaragua	7
	Colombia	20
	Bolivia	5
TOTAL		179

INVESTIGACION PARTICIPATIVA EN AGRICULTURA (IPRA)/PROGRAMA DE LADERAS CIAT

CURSO METODOLOGIA DE INVESTIGACION PARTICIPATIVA LOS COMITES DE INVESTIGACION AGRICOLA LOCAL (CIAL)
Primera parte Fase teorica

Managua (Nicaragua) Julio 1 a Julio 12 de 1996

Programa

Lunes 1 de Julio

08 30 09 30	Presentacion
09 30 10 00	Aclaracion de expectativas
10 00 10 30	Pre test conceptos claves en Investigacion participativa
10 30 10 45	Cafe
10 45 11 15	Marco conceptual
11 15 12 15	Pasos en la metodologia de la Investigacion Participativa
12 15 01 30	Almuerzo
01 30 02 30	Consorcio Interinstitucional para una Agricultura sostenible en Laderas CIPASLA
02 30 03 30	Los Comites de investigacion Agricola Local CIAL
03 30 03 45	Café
03 45 04 45	Gestion administrativa y organizativa de los CIAL El Fondo CIAL Normas y funciones del CIAL

Martes 2 de Julio

08 00 08 30	Resumen e inquietudes del dia anterior
08 30 09 00	Video El Método IPRA
09 00 10 15	Destrezas de comunicacion Conceptos teoricos Video
10 15 10 30	Cafe
10 30 12 00	Ejercicio Saber escuchar
12 00 01 30	Almuerzo
01 30 02 00	Metodologia para la identificación de criterios y niveles de bienestar
02 00 02 45	Ejercicio Identificacion de criterios y niveles de bienestar
02 45 03 00	Café
03 00 03 30	Criterios y niveles de bienestar (Continuacion)

EL METODO CIAL, gestion de la investigacion por los agricultores

03 30 04 30	Tecnica del Flujograma (conceptos) Conceptos teoricos Ejercicio
04 00 05 00	Pautas para la formulación del plan de actividades para la conformacion de Cial en sus zonas de trabajo

Miercoles 3 de Julio

08 00 08 30	Resumen e inquietudes del dia anterior
08 30 09 30	Criterios de selección de comunidades Video Ejercicio
09 30 10 00	Cartilla No 1 El Ensayo
10 00 10 15	Cafe
10 15 10 45	Cartilla No 2 Los Comites de Investigacion Agricola Local
10 45 11 15	Cartilla No 13 Guias para conocer nuestro camino
11 15 12 30	El Diagnostico participativo Conceptos Resultados Video
12 30 01 30	Almuerzo
01 30 02 00	Cartilla No 3 El Diagnóstico
02 00 02 15	Elaboracion del flujograma a seguir en el diagnostico
02 15 03 15	Ejercicio Simulacion de un Diagnostico
03 15 03 30	Cafe
03 30 04 30	Ejercicio Simulacion de un diagnóstico (cont)
04 30 05 30	Ejercicio Diagnóstico participativo practica por los participantes

Jueves 4 de Julio

08 00 08 30	Resumen e inquietudes del dia anterior
08 30 09 00	Cartilla No 4 El Objetivo del ensayo
09 00 09 15	Video Construccion del objetivo del ensayo
09 15 10 15	Ejercicio Simulacion de la construccion del objetivo del ensayo
10 15 10 30	Café
10 30 11 30	Ejercicio Construccion del objetivo del ensayo practica por los participantes
11 30 12 30	El diseño experimental en los ensayos de los CIAL Conceptos teoricos Ejercicio Establecimiento de un experimento en campo
12 30 01 30	almuerzo
01 30 02 30	El diseno experimental en los ensayos de los Cial (Continuacion) Ejemplos Ejercicios Practica
02 30 03 30	Cartilla No 7 Cosas que pueden pasar Ejercicio
03 30 03 45	Cafe
03 45 04 15	Cartilla No 5 Planeacion del ensayo
04 15 04 30	Video Planeacion del ensayo
04 30 05 30	Ejercicio de Planeacion de un ensayo (simulación)
05 30 06 00	Práctica de planeación de un ensayo por los participantes
06 00 06 30	Planeacion y confirmación de responsabilidades en el grupo para el diagnostico y planeación de ensayo en

Viernes 5 de Julio

07 00 09 30	Salida al campo
09 30 12 00	Realizacion de un diagnóstico participativo en un CIAL Lugar
12 00 01 30	Almuerzo
01 30 03 30	Viaje de retorno

Sabado 6 de Julio

07 00 09 30	Salida al campo
09 30 12 00	Realizacion de una Planeación en un ensayo CIAL Lugar
12 00 01 30	Almuerzo
01 30 03 30	Viaje de retorno

Lunes 8 de Julio

08 00 12 00	Retroinformacion de las prácticas realizadas Procesamiento de la informacion Diagnostico Planeacion
12 00 01 30	Almuerzo
01 30 02 30	La evaluacion de alternativas tecnológicas con Agricultores Conceptos teoricos
02 30 03 30	Tipos de evaluacion La evaluación abierta Orden de preferencia Matriz de ordenamiento La evaluación absoluta

03 30 03 45	Cafe
03 45 04 45	Ejercicio Evaluacion absoluta de tecnologias simulacion)
04 45 06 00	Cartilla No 6 La evaluación del Ensayo Video La evaluacion del ensayo Test final sobre evaluacion con productores

Martes 9 de Julio

07 30 08 00	Resumen e inquietudes del dia anterior
08 00 08 45	Salida a un ensayo del centro experimental
08 45 12 00	Practica simulacion de una entrevista de evaluación abierta y una absoluta
12 00 01 30	Almuerzo
01 30 02 00	Retroinformacion sobre la practica realizada
02 00 03 00	Tabulacion de resultados de las encuestas
03 00 03 15	Cafe
03 15 04 00	Tabulacion de resultados (cont)
04 00 04 30	Consultas sobre el plan de actividades

Miercoles 10 de Julio

08 00 09 00	Resumen e inquietudes del dia anterior
09 00 10 30	Cartilla No 8 Compartimos los resultados de nuestro ensayo Ejercicio
10 30 10 45	Cafe
10 45 11 15	Cartilla No 9 Un caso real

11 15 11 45	Video Informacion a la comunidad
11 45 01 30	Almuerzo
01 30 02 30	Cartilla No 11 Las cuentas claras Propuestas para la formacion del fondo CIAL
02 30 03 30	Foro retroinformacion a las entidades sobre el trabajo CIAL (discusion entre los participantes)
03 30 03 45	Cafe
03 45 04 15	Video Los Cial de Cusco (Peru)

Jueves 11 de Julio

08 00 08 30	Resumen e inquietudes del dia anterior
08 30 09 00	Cartilla No 12 Es bueno saber a tiempo si vamos bien
09 00 10 00	El formato de evaluacion externa para los CIAL
10 00 10 15	Café
10 15 11 15	Encuesta de seguimiento a los CIAL caso Brasil caso Colombia
11 15 12 15	Post test sobre la metodologia CIAL
12 15 01 30	Almuerzo
01 30 06 00	Conclusion de la elaboracion de la propuesta de trabajo para la formacion de CIAL en sus respectivas zonas de trabajo

Viernes 12 de Julio

08 00 08 30	Resumen e inquietudes del dia anterior
08 30 11 00	Presentacion de las propuestas de trabajo
11 00 12 00	Evaluacion final del evento
12 00 01 30	Almuerzo

ANNEX II

INSTITUTIONAL MODELS FOR NR MANAGEMENT

Beyond the farm and within the community
Issues of collective action in participatory natural resource management research

Helle Munk Ravnborg
September 1996

Natural resource management problems related to agriculture often transcend field or farm boundaries and can only be understood or solved if adopting a broader perspective i e a landscape or watershed perspective Pest management problems is an example The presence and severeness of crop pests and diseases do not only relate to the management given to the individual plot (the agroecosystem) it depends more widely on the way the landscape is structured in time and space in terms of plot sizes intra and interspecies diversity habitat connectivity etc (Altieri 1987 Barrett 1992) Soil erosion is another transboundary natural resource management problem (Burel *et al* 1993) Cropping practices including the use of erosion control mechanisms on upstream plots directly affect soil and water movements at the plots below To tackle problems occurring in one part of a landscape or watershed action might have to be taken in other parts Vice versa to assess the impact on natural resources of specific management practices implemented in certain parts of the landscape measurements might have to be taken in other parts or on other crops or resources

This interdependency makes natural resource management research different from crop improvement research that typically focusses on plot level effects and measurement of resource flows at the plot or farm level Also from an actor oriented or participatory perspective natural resource management research differs from crop improvement research Crop improvement research typically focusses on the individual farmer or perhaps a number of individual farmers seen to represent distinct types of farmers and farming conditions In contrast the temporal and spatial interdependency that characterizes many natural resource management problems implies that some form of collective action among landscape or watershed users to coordinate how individual plots are managed becomes essential to improve natural resource management Collective action is here understood as action that emerges from a process of individuals deciding to voluntarily coordinate or concert behavior in this case natural resource management practices A central issue in participatory natural resource management research therefore is how to foster and facilitate such collective action This introduces organizational issues including the issue of scale into the participatory research agenda This paper argues that the appropriate unit for collective natural resource management has to be found *within* the community Apart from being neither a bio physical unit showing the bio physical interdependencies as e g a watershed nor a social unit the community tends to be too large for mutual understanding and trust to develop among its members

A second implication of the bio physical interdependency that exists within a landscape or watershed is the importance of involving the totality of users in efforts to improve natural resource management and adequately appreciate the different views interests concerns etc that individuals or groups of landscape or watershed users might have on their own or others use of the landscape Failing to include some landscape users or stakeholders and their concerns might due to the bio physical interdependency hamper efforts to improve natural resource management Methodologically the challenge is how to identify stakeholders relating to a particular landscape and adequately elicit their concerns interests etc Obviously in most cases there will be both internal and external stakeholders In this paper however I shall only deal issues related to internal stakeholders

Measuring or even observing effects of particular resource management practices at the landscape or watershed level is inherently complicated both to landscape users and to researchers This is the third implication of the bio physical interdependency that exists in time and space between the different patches of land and resources within a landscape and it reduces immediate incentives for landscape users to engage in efforts to improve natural resource management The third challenge to participatory natural resource management research is to improve land literacy i e helping people read and appreciate signs of health (or ill health) in a landscape (Campbell 1994) and to devise a process or a set of tools through which this can be done

In the following I shall deal in more detail with each of these challenges for participatory research arising from shifting the focus from crops to natural resources from plot to landscape or watershed and from farmers as individual actors to farmers as actors in a group Rather than dealing with participatory research as a set of methods or techniques I shall focus on the participatory research as an action oriented process On the one hand the aim of this process should be to enhance landscape users awareness and understanding of natural resource management problems and their ability to act upon these problems drawing on own as well as external resources On the other hand the aim should be to identify generic organizational process oriented lessons or principles for participatory natural resource management to be applied elsewhere

Fostering collective action in landscape management

Rural landscapes particularly in hillsides regions such as the Andean hillsides or the East African highlands tend to be managed by numerous individual landholders Most of them own small patches of land which together with other natural resources and perhaps day laboring on neighboring farms provide the major part of livelihood Decisions on how to manage land water and other natural resources are taken individually and tend to be governed by concerns related to securing household livelihood rather than with a view to the landscape and the entire set of landscape users

This does not only mean that landscape users lose sight of important landscape properties and thereby that related natural resource management problems are aggravated It also means that opportunities for improving production even in the short term are missed

A number of factors might explain this apparent mismatch between potential gains from collective action on the landscape or watershed level on the one hand and its absence or inadequacy on the other the fact that people tend to get used to and not question *status quo* the lack of individual willingness or capacity to assume the transaction costs related to initiating collective action and the lack of information about attitudes and willingness of other landscape users towards collective action (White and Runge 1995) Altering this situation is likely to require a stimulus and input from outside This is where the role of participatory research becomes important Some key elements of such a process of change can be identified based on experiences reported in literature as well as own work conducted in the Rio Cabuyal watershed in the Andean hillsides of southwestern Colombia

A first element is to stimulate that landscape users on an individual basis come to appreciate the need for collective action to solve problems that they are currently facing by drawing their attention to landscape interdependencies In the Gal Oya case in Sri Lanka where farmers got organized to improve irrigation water management (Uphoff 1992) so called institutional organizers were visiting farmers on an individual basis asking about their problems related to irrigation and how they could solve these as individuals This made farmers recognize the need for collective action and laid the ground for group meetings In our case from Los Zanjones a 44 hectare watershed in Rio Cabuyal Colombia users were asked to analyze a drawing of a fictive landscape with a number of ongoing activities such as tomato cultivation and associated application of chemicals fishing incautious use of burning for land preparation exposing neighboring fields to danger pollution of water through outlets of sewage water etc (see figure 1) Watershed users were specifically asked to make observations on how individual activities were affecting each other and to relate this to activities taking place in their own watershed

Individual expectation of gains is an important condition for collective action However as pointed out by both Uphoff based on the Gal Oya case and by White and Runge in their study of peasants engaging in collective action to control transboundary erosion in Maissade Haiti gains should not be interpreted in a strictly economic sense Gains in terms of personal satisfaction derived from contributing to the improved well being of others altruism (Uphoff 1992) or in terms of banking favors and building (or honoring) debt claims with neighbors (White and Runge 1995) often act as important motivations for individuals to participate in collective action

The second element in fostering collective action is to provide an opportunity for face to face contact between landscape users and thereby assume an important part of the initial transaction costs associated with initiating collective action Again based on the Gal Oya case Uphoff describes how simply bringing people together to meet face to face created a public forum where before there had only been private communication It facilitated new flows of information about what neighbors do and think and created pressures for fairness legitimacy status and values that altogether prepared the ground for collective action However for such face to face contact to be practically possible and effective in building up mutual trust and understanding among landscape users the number of users and thereby the landscape or watershed should be relatively small

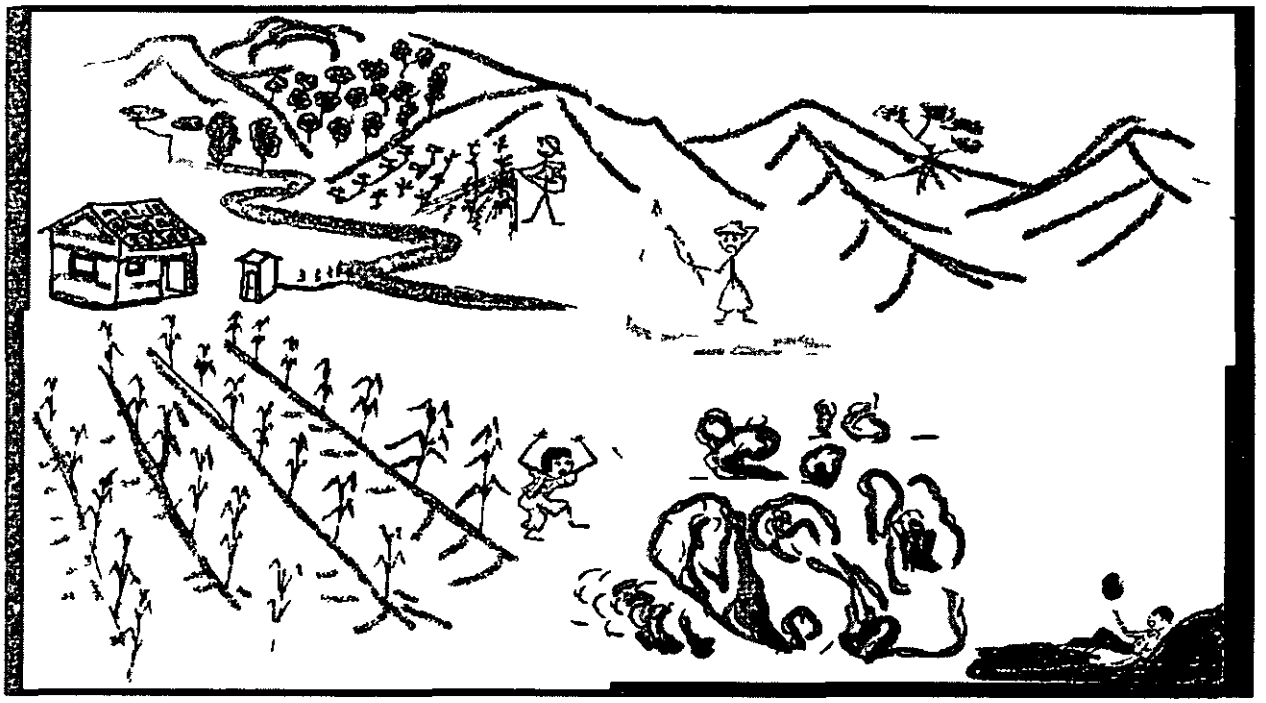


Figure 1 Drawing of fictive landscape used in Los Zanjones Colombia

(Cernea 1988 Uphoff 1992 1994) i e up to 20 30 users or families which in a smallholder context typically would mean an area of less than 100 hectares The appropriate unit for fostering collective action is therefore likely to be found *within* the community

Yet for many natural resource management problems such as pest management problems 100 hectares will often be considered too small an area of intervention due to the related bio physical processes taking place at a wider scale To reconcile such concerns with the importance of mutual trust and understanding among landscape users as a precondition for collective action the more successful strategy seems to be to link small base level groups which have the benefit of face to-face contact into a multi tiered

type of organization rather than to go large scale from the beginning (Uphoff 1994 Ostrom 1994) This moreover signals the importance of starting work in a landscape by addressing problems that besides being important to landscape users are solvable or ameliorable at the small scale Once successful experiences are gained at this level problems that require coordinated management of larger areas and between larger numbers of users might be embarked upon through contacts with users of neighboring landscapes or watershed

Stakeholder identification

Collective action in landscape or watershed management is likely to have to take place in the context of diversity Landscapes typically contain a multitude of common and privately owned resources such as crop land pastures vegetation animals and water Each resource has an associated complex of often conflicting interests held by stakeholders inside as well as outside the watershed As an illustration of the diversity the 20 families using the 44 hectare watershed Los Zanjones comprise four ethnic groups two religious groups commercial as well as subsistence farmers land renters and land owners etc Due to the bio physical interdependency between the resources within the landscape successful landscape management depends on the identification and understanding of different stakeholders and their resource use

Scaling up from plot to landscape and from crops to natural resources implies that characterizing users according to dimensions such as resource endowments gender degree of market involvement etc is no longer sufficient Many more aspects are likely to be in play such as non agricultural uses of landscape the particular position of a plot a crop or a practice within the landscape degree of attachment to the land religion ethnicity etc Moreover though to varying degrees interests of external stakeholders relate to and influence how landscapes are managed

Methodologically the challenge is that the specific factors shaping the existence of different particularly internal stakeholder groups are likely to vary between landscapes and may depend on the particular issue within landscape management This precludes or at least complicates *a priori* stakeholder identification based on a predetermined checklist of possible factors Instead stakeholder identification has to be contextual and calls for open ended constructivist inquiry or exploration (Guba and Lincoln 1989) The constructivist inquiry consists of a process through which landscape users are invited on an individual basis to relate their concerns ideas values and issues related to the landscape and the management of resources taking place within it Following each interview central themes concepts ideas values concerns and issues proposed by the respondent are analyzed by the inquirer into an initial formulation of the respondents *construction* After the following respondent has volunteered his or her perception the themes suggested by the preceding respondent(s) are introduced and the respondent is invited to comment on those themes The constant comparison and contrasting of

divergent views in order to achieve a higher level synthesis of them all is a salient feature of constructivist inquiry (Guba and Lincoln 1989) and seems essential to any attempt to meaningfully identify and appreciate the existence conflicting interest

To ensure that *all* stakeholder groups are identified landscape users are sampled according to what could be called a contrast or maximum variation sampling procedure where each respondent after the interview is asked to nominate another landscape user who in the respondent s view would be likely to hold as contrasting a perception as possible from his or her own The process of interviewing and soliciting nominations for new respondents is repeated until the information being received either becomes redundant or falls into two or more constructions that remain at odds in some way Each of the emerging constructions indicate the existence of a stakeholder group At this point it is useful to bring together the members of each stakeholder group to discuss the construction and affirm its credibility as a joint construction of landscape management issues for that particular stakeholder group These joint stakeholder group constructions form the basis of subsequent negotiation and formulation of action plans that are to take place between the different stakeholder groups identified within the landscape

A crucial feature of successful stakeholder identification seems to be that it is based on interviews with individuals and departs from the individual respondent s personal concerns etc In contrast asking groups of landscape users to identify different interests or stakeholders within the group or directly asking individuals to identify conflicts would imply distancing themselves from their neighbors in the presence of the group something which is often not socially acceptable As a case in point from the Andean hillsides claims of homogeneity and agreement with respect to landscape management made in group sessions were later in individual interviews found to cover various types of disagreements disapproval of others resource use and even open conflict between landscape users

Collective landscape monitoring

The difficulty of measuring or even observing the effect of particular resource management practices at the landscape level and the interaction taking place between different patches or species within a landscape or watershed affects landscape users as well as researchers For landscape users it reduces the immediate incentives to engage in efforts to improve natural resource management For researchers it seriously questions conventional approaches to experimentation Requirements of controls and replications on experimental plot level which are central elements of conventional experimentation and involve a relatively limited amount of data collection become virtually impossible to maintain in landscape level research Instead large data sets on many landscape features related to the issue in question are needed from different landscapes that at best are similar (Firbank 1993) This is costly

Increased involvement of landscape users in monitoring and analysis of spatial and temporal changes of key features within the landscape such as water quantity and quality severeness of pest attacks etc might offer a practical solution both for landscape users and for researchers For landscape users it not only would improve land literacy i e ability to read and appreciate signs of health (and ill health) in a landscape and to understand the condition of the environment around them (Campbell 1994) it also would enhance the ability to plan interventions in terms of scale and timing of efforts as well as to prioritize between possible alternative solutions (Ravnborg and Ashby 1996) For researchers the involvement of landscape users in monitoring would provide a feasible way of obtaining the large and therefore expensive sets of data required to properly analyze natural resource management problems at the landscape level As an example from Australia schools and landcare groups i e groups of farmers working together to develop more sustainable systems of land management gathered and analyzed tens of thousands of water samples from creeks rivers reservoirs irrigation channels and bores Each school or landcare group analyzed its data and sent it to a central agency for processing In return they received a computer generated overlay map of water quality in the whole district which served for interpretation discussion and planning of further actions such as rehabilitation projects Apart from enhancing land literacy involving landcare groups and schools in water monitoring meant that a larger amount of data from more sampling points could be gathered than was conceivable for government agencies paying professional staff (Campbell 1994) This point is even more pertinent in developing countries where the authorities responsible for natural resource management tend to be inadequately staffed and hence even less able to perform such data collection than their Australian counterparts (Ravnborg and Ashby 1996)

Many of the so called rapid rural appraisal (RRA) techniques would be useful in such efforts to involve landscape users in landscape monitoring particular mapping techniques and techniques that allow for seasonal analysis of a particular problem or phenomenon More emphasis will however have to be placed on devising procedures for *continuous* monitoring rather than the present one off appraisal of the state of resources and for compiling this information in a way that permits local as well as external analysis of the information The tool developed by ICLARM for monitoring and assessment of small farm integrated agriculture aquaculture systems RESTORE which combines participatory research procedures with computer based analysis might provide a basis for development of tools to capture resource dynamics at the landscape or watershed level

Implications for natural resource management

Moving from plot to landscape and from focussing on crop production in isolation to crop production in conjunction with natural resource management does not only raise issues related to social research centered around collective action as discussed in this paper but also issues related to bio physical research aimed at understanding landscape level dynamics and designing natural resource management technologies Two issues stand out The first issue which has already been touched upon relate to scale and how to move between scales As described for weed management studies (Firbank 1993) and for control of water run off (Burel *et al* 1993) observations made at one or a few points within a landscape cannot be extrapolated to the entire landscape due to interdependencies existing between the different patches Thus for many natural resource management problems there is a need to take the landscape as the unit of study This rarely happens today

The second and related issue is that of the role and mode of experimentation Experimentation in a conventional sense is often practically unfeasible at the landscape level Moreover it may be unjustifiable to the extent that people depend on a particular landscape for their satisfaction of present and future needs Instead design of natural resource management technologies increasingly will have to rely on large sets of data collected jointly by researchers and landscape users in real world landscapes and analyzed through the use of different types of multivariate statistical procedures (Jongman *et al* 1995) geographical information systems and modelling Real world experimentation at the landscape level will on the other hand have to be limited to issues and areas where local landscape users are motivated and organized to undertake such experimentation through collective action

References

Altieri M 1987 *Agroecology The Scientific Basis of Alternative Agriculture* Westview Special Studies in Agriculture Science and Policy

Barrett G W 1992 Landscape Ecology Designing Sustainable Agricultural Landscapes In *Journal of Sustainable Agriculture* Vol 2 No 3 pp 83 103

Bunce R G H and R H G Jongman 1993 An Introduction to Landscape Ecology In Bunce R G H L Ryszkowshi and M G Paoletti (eds) 1993 *Landscape Ecology and Agroecosystems* Lewis Publishers pp 3 10

Burel F J Baudry and J Lefeuvre 1993 Landscape Structure and the Control of Water Run off In Bunce R G H L Ryszkowshi and M G Paoletti (eds) 1993 *Landscape Ecology and Agroecosystems* Lewis Publishers pp 41-47

Campbell A 1994 Landcare in Australia Spawning New Models of Inquiry and Learning for Sustainability In *Recherches systeme en Agriculture et Developpement Rural Symposium International Montpellier France 21 25 Novembre 1994 Communications* pp 366 370

Cernea M 1988 Alternative Social Forestry Development Strategies In Ives J and D C Pitt (eds) 1988 *Deforestation Social Dynamics in Watershed and Mountain Ecosystems* Routledge pp 159 190

Firbank L G 1993 The Implications of Scale on the Ecology and Management of Weeds In Bunce R G H L Ryszkowshi and M G Paoletti (eds) 1993 *Landscape Ecology and Agroecosystems* Lewis Publishers pp 91 104

Guba E and Y Lincoln 1989 *Fourth Generation Evaluation* Sage Publications

Jongman R H G C J F Ter Braak and O F R van Tongeren (eds) 1995 *Data Analysis in Community and Landscape Ecology* Cambridge University Press

Ostrom E 1994 Neither Market nor State Governance of Common pool Resources in the Twenty First Century *Lecture Series* 2 International Food Policy Research Institute

Ravnborg H M and Ashby J A 1996 Organising for Local level Watershed Management Lessons from Rio Cabuyal Watershed Colombia *Network Paper* No 65 ODI Agricultural Research and Extension Network Overseas Development Institute

Uphoff N 1992 *Learning from Gal Oya Possibilities for Participatory Development and Post Newtonian Social Science* Cornell University Press

Uphoff N 1994 Local Organizations for Supporting People based Agricultural Research and Extension lessons from Gal Oya Sri Lanka In Scoones I and J Thompson (eds) 1994 *Beyond Farmer First Rural People s Knowledge Agricultural Research and Extension Practice* Intermediate Technology Publications pp 213 220

White T A and C F Runge 1995 The Emergence and Evolution of Collective Action Lessons from Watershed Management in Haiti In *World Development* Vol 23 No 10 pp 1683 1698

ANNEX III

SYSTEMWIDE PROGRAM

Systemwide Program

on

Participatory Research and Gender Analysis for Technology Development and Institutional Innovation

A proposal to the Technical Advisory Committee (TAC)

Submitted by

CIAT
(International Center for Tropical Agriculture)
CIMMYT
(International Maize and Wheat Improvement Center)
IRRI
(International Rice Research Institute)
ICARDA
(International Center for Agricultural Research in the Dry Areas)

October 1996

Table of Contents

Systemwide Initiative on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation

List of Figures

List of Tables

List of Boxes

Executive Summary

The Need for a Systemwide Program

The participation of farmers—especially women—in technology development is vital for achieving impact that benefits poor people This is why the CGIAR system urgently needs to strengthen consolidate and mainstream its gender analysis and participatory research in a high priority high visibility program that recognizes farmer participation as an important strategic research issue

Over the last decade or more the IARCs have done substantial work to introduce a user perspective into adaptive research This proposal builds upon that work but offers something more It originates from recent evidence that user participation can be critical in the *pre adaptive* stages of certain types of research In contrast to earlier approaches to on farm research pre adaptive participatory R&D brings users into the early stages of technology development as researchers and decision makers who help set priorities define criteria for success and determine when an innovation is ready for release to farmers This new role changes the division of labor between farmers and scientists and may dramatically reduce the cost of applied research We have some evidence that this novel approach can significantly improve the impact of research for poor farmers especially women However evidence is patchy and it is not well understood how to replicate success on a large scale The key contribution of this proposal will be to develop clear guidelines on how to achieve this and build capacity to operationalize novel approaches in practice

It is now widely recognized that sustaining the productivity gains from earlier CGIAR success must be done in a way that preserves biodiversity and the natural resource base protects the environment and maintains and protects the farm family s health and livelihood Pre adaptive participatory research will be an important research tool in developing NRM technologies

To determine the potential of pre adaptive participatory R&D involves considerable effort in methodology development The outputs of this work are participatory techniques and tools for gender analysis that are useful inside and outside the CGIAR These products are truly international public goods requiring rigorous empirical research on new techniques integrated with strategic and applied research for technology development

This type of methodology development is dispersed and often sporadic The result is duplication of effort and a persistent deficit of knowledge on how to incorporate the methods cost effectively By pooling resources in a systemwide effort institutions will greatly accelerate the development of new tools that make farmers genuine partners in research

Program Goal

To improve the ability of the CGIAR System and other collaborating institutions to develop technology which alleviates poverty improves food security and protects the environment with greater equity

Program Purpose

To assess and develop methodologies and organizational innovations for gender sensitive participatory research and operationalize their use in plant breeding crop and natural resource management

Beneficiaries

- Poor farmers especially women will benefit from accelerated and more widespread adoption of more appropriate technology by having regular input its development
- CGIAR centers NARIs NGOs and rural grassroots organizations will be able to work more effectively with technology users and as a result they will develop and deliver appropriate technology for low income farmers more cost effectively

Expected Impact

Methods

- This research will accelerate technology development and adoption for crop improvement and natural resource management (NRM) by generating new widely applicable methodologies for pre adaptive participatory research and gender analysis tested in at least eight existing projects in ecoregional sites
- Researchers will have a stronger capacity to process feedback on technology design from gender-differentiated client groups

Institutional strengthening

Ecoregional programs will gain access to worldwide expertise on participatory research and gender analysis for capacity building and empirical studies at ecoregional sites

- Better designed technologies with a greater probability of adoption and with less time in the pipeline before testing by clients will result in considerable savings and increased impact for NARS
- Indigenous systems of crop development and natural resource management will be strengthened and integrated in a mutually reinforcing way with formal research Organisational innovations required to mainstream gender analysis and participatory approaches will be identified and tested

Poverty alleviation and environmental protection

- The development and adoption of diverse germplasm that uses and conserves the genetic traits deemed valuable by farmers and breeders will be greatly accelerated in major food crops
- Technologies for natural resource management that increase food security while protecting the environment will be more acceptable to users and will be adopted more rapidly

Innovations

- Methodologies for pre adaptive participatory R&D will promote user involvement in the early stages of technology design
- Gender analysis will be integrated into core plant breeding and NRM research projects
- Through empirical studies and comparative data it will be possible to assess the payoff to participatory methods and gender analysis in different stages of research
- NARS NGOs and producers will be closely involved with the CGIAR in methodology development for participatory R&D
- The institutions involved will acquire a stronger capacity to operationalize participatory research and gender analysis in their core activities

Institutional Partners

CIAT CIMMYT IRRI and ICARDA have agreed to work together as lead Centers in this initiative They will develop a plan of work in consultation with interested institutions which have capacity to contribute to methodology development through the working groups and are actively engaged in some aspect of participatory research Among potential partners of this character interest has been indicated to date by CIFOR Cornell University (USA) ICAR (India) ICRISAT ILEIA (Netherlands) INIAP and FLACSO (Ecuador) IPGRI CORPOICA (Colombia) NORAGRIC (Norway) WARDA and the World Resources Institute (USA) (see list of participants in the 1996 SWI Planning Meeting)

Implementation Period

- Planning phase April to December 1996
- Full program Five years 1997 2001

Location

This will be a global effort linked with ecoregional programs to identify sites for empirical work training and dissemination in Africa Asia and Latin America

Budget

Total program funding for one year amounts to US$0 9 million This will enable partners to conduct empirical studies needed for methodology development conduct capacity building activities assess current practices and network by e mail

Management

Three decentralized working groups linked to ecoregional programs will integrate with CGIAR projects in their respective thematic areas participatory plant breeding participatory NRM research and gender analysis The 8 member Planning Group has elected representatives from each working group and from 4 types of stakeholders (NARIs NGO s Donors and IARCs)

Executing Agency

The International Center for Tropical Agriculture (CIAT) in Colombia South America

Outputs

1 Methods for participatory plant breeding (PPB)

- Participatory research methods and gender analysis tools suitable for integrating farmer crop development systems with advanced breeding techniques
- Participatory breeding strategies refined for a cross section of species with guidelines on appropriate breeding populations field techniques and suitable biotechnology tools
- Methods to identify strengthen and link to research the knowledge and skills of rural men and women in germplasm management
- Varieties acceptable to farmers that incorporate traits derived from local landraces and global germplasm

2 Methods for participatory research on natural resource management (NRM)

- Participatory research methods and gender analysis tools suitable for integrating indigenous experimentation on NRM with formal research
- Strategies and methods for participatory development of a cross section of prototype NRM technologies which can address the diversity of farmers objectives in soil water and plant management
- Methods to identify strengthen and link to research the knowledge and skills of rural men and women in experimenting with NRM practices
  Technologies acceptable to farmers for increasing productivity while protecting the environment

3 *Gender sensitive methodologies suitable for pre adaptive participatory research*

- Participatory methods for determining when it is crucial to involve women at an early stage in technology design
- Methods that enable user groups to provide feedback to research from participatory monitoring of gender differentiated effects of new technologies

4 *Organizational innovations for institutionalizing participatory approaches operationalized and evaluated*

Participatory projects will test and evaluate novel organizational linkages

5 *Capacity for participatory research and gender analysis further developed in the form of a critical mass of expertise in participatory research and gender analysis innovative approaches to capacity building operationalized*

6 *Procedures for building new partnerships among the IARCs NARS NGOs and farmer groups realized to utilize effectively complementarities among partners and to accelerate learning about participatory research and gender analysis*

Activities

- Empirical field studies for methodology development will be integrated into ongoing CGIAR/NARS projects

- Training in participatory research methods and gender analysis will be offered to IARCs NARs and producer organizations taking part in joint projects

- Specialized workshops will be organized on participatory plant breeding participatory NRM research and gender analysis

- International seminars on comparative analysis of results will be held to assess applications of the same methodologies across different fields

Introduction

Achieving the participation of users especially women in the process of technology development is an important strategic research issue vital to achieving impact which benefits poor people User participation in the early stages of technology design ensures that new technologies can be adopted rapidly Household food security particularly among children in poor countries is vitally affected by women s access to income generating technologies Gender analysis is an important tool for ensuring that user participation includes women so that their special needs and constraints are taken into account in technology development The feminization of poverty a trend which is driving rural women in particular to form an increasing proportion of the very poor makes it increasingly imperative that a high priority and visibility be given to strengthening consolidating and main streaming gender analysis and participatory research in the CGIAR system

Need for a Systemwide Effort on Methodology Development and Organizational Innovation in Participatory R&D and Gender Analysis

Over the last decade substantial work has been done to introduce a user perspective into adaptive research For example CIMMYT s development of on farm research methodology and resulting manuals and training have been very influential as have CIP s farmer back to farmer approach IRRI s experience with the Women and Rice Farming Network FAO s Women and People s Participation in Development ISNAR s study of client oriented approaches and CIAT s farmer participatory research At present there is a significant growth in the application of extant participatory techniques in adaptive research and technology transfer

This proposal builds upon past work but offers something more It originates from recent evidence that user participation can be critical in preadaptive stages of certain types of research In contrast to earlier approaches to on farm research preadaptive participatory R&D brings users actively into the early stages of technology development as researchers and decision makers who help to set priorities define criteria for success and determine when an innovation is ready for release to farmers The benefits of this approach are summarized in Box 1

To determine the potential of preadaptive participatory R&D involves considerable effort in methodology development At present it is difficult to say what degree of user participation is appropriate at an early stage in the research process and for which circumstances Some experience suggests that preadaptive adaptive participatory R&D moves scientists into a different set of strategic research questions and creates a new division of labor between scientists and farmers Other research suggests that preadaptive participatory R&D may reduce the costs of applied research (see for example Ashby 1995 Berg 1995 Thrupp 1995 Sperling 1995 Welzein 1995) A recent study which set out to evaluate a cross section

of experiences in different parts of the world with participatory research found that there was too little evidence being collected on which to base an evaluation (Okali and Sumerg 1995) Methodology development is needed to systematize approaches to this new division of labor and to identify when it is advantageous Investigation of the appropriate techniques to use in preadaptive participatory R&D can significantly improve the efficiency of the whole research process and its relevance to users

The CGIAR has been refocussing and restructuring its activities to address the interrelated issues of poverty alleviation preservation of the natural resource base and sustainable increases in agricultural productivity in developing countries Simple production only oriented technologies are no longer suitable within this more holistic perspective CGIAR research has shown that it is possible to increase production while carefully husbanding the soil and water resource base and managing pests However the complex knowledge upon which such sustainable management practices are based must be synthesized in a way that farmers can readily adopt and modify them We know little of what determines the acceptability of knowledge intensive technologies or what approach may be the most efficient to developing and testing prototypes Clearly a close working relationship with farmers should help us in understanding the issues impinging on the adoptability of these technologies and in their actual development

Box 1 Benefits of upstream participatory R&D

Farmers participate in research priority setting

In the early stages of technology development concepts of what technology clients are likely to adopt are improved

Target environments for evaluating technology are defined more accurately together with farmers

Technologies are in users hands and adopted more rapidly

There are fewer costly white elephant technologies on the shelf

Harnesses clients knowledge and creativity to technology design

Gender analysis is used in participatory research because it is necessary to determine which are the appropriate client groups to actively participate and whether those participants need to be gender differentiated Many of the available tools of gender analysis are a subset of participatory research methods (although not all gender analysis is participatory) More efficient cost effective diagnostic methods are needed which will serve as initial probes to determine the gender specificity of a prototype technology in the early stages of research

Researchers need sharper methods to understand when differentiating users by gender will be of critical importance and farmers need tools to help them choose appropriate participants in a joint research effort

A vital element in the restructuring of the CGIAR is the creation of new partnerships emphasizing broader participation of stakeholders in setting research priorities and in the conduct of development oriented research During the ICW 95 meetings in October discussion of the priority setting process was concerned with the urgent need to enhance the impact of research on the well being of the poor with particular attention to women Achieving this goal will require building new partnerships not only with respect to institutional relationships but also in terms of research methodology that promotes participation of gender differentiated client groups in the process of technology design

It is important that the CGIAR as a role model for a participatory research process have a demonstrated capacity to use methodologies which create a common ground for working with the NGO sector and among producer organizations involved with the poor and especially poor women in developing countries A systemwide program of participatory research and gender analysis will testify to a serious effort to mainstream these methods within the new CGIAR

There is growing recognition of this need in several of the CGIAR Centers expressed in some of the systemwide programs of research and scattered experience which shows important benefits of upstream participatory R&D in accelerating the adoption of technology However current experimentation with this approach in the Centers is dispersed and often sporadic In the absence of a mechanism for systematizing this research there is considerable duplication of this fragmentary *ad hoc* effort resulting in lost momentum

Duplication of effort in methodology development for preadaptive participatory R&D not only slows down the learning process but also contributes to inefficient use of the very scarce capacity world wide for innovation in these methods As a result although references to the need for participatory approaches and for attention to gender analysis are plentiful there is a deficit of knowledge on how to incorporate these methodological approaches into early stages of technology design in a cost effective way

A coordinated systemwide research effort can address some important opportunities for methodology development which will determine how quickly participatory research and gender analysis are incorporated into the mainstream of CGIAR research

The outputs of this work are participatory techniques and guidelines for their use that are useful inside and outside the CGIAR These products are truly international public goods requiring rigorous empirical research

Innovative features of this proposal

A rigorous assessment of the general indications that participatory research methods and gender analysis are important for success of technology design and adoption will be conducted

This research will provide guidelines well grounded in scientific research on the circumstances in which these approaches work and why and the costs and benefits of different ways to operationalize them

The program will provide a working model in the CG of how to operationalize and mainstream the use of participatory research and gender analysis and the capacity building and organizational innovations needed to do this The systemwide program will be carried out in close partnership among the organizations IARCs NGOs NARIs Universities and grassroots organizations that need to institutionalize capacity to use participatory research and gender analysis

Genesis of this proposal

This proposal is the product of a seminar and planning meeting conducted from September 9 14 1996 at Cali Colombia which brought together an international group of fifty researchers and development professionals highly experienced in participatory research and gender analysis They represented IARCs NARIs universities NGOs and donors (see Annex I for participant list) These scientists and development practitioners from Asia Latin America Central America Africa (east west south and north) South and Southeast Asia the Middle East and Europe joined efforts to develop this research plan to address the priority methodological issues in participatory research and gender analysis They defined the program goal purpose and workplans for three working groups plant breeding natural resource management and gender analysis

This document synthesizes the recommendations developed by the participants in the planning meeting

Program Goal

To improve the ability of the CGIAR System and other collaborating institutions to develop technology which alleviates poverty improves food security and protects the environment with greater equity

Program Purpose

To assess and develop methodologies and organizational innovations for gender sensitive participatory research and operationalize their use in plant breeding crop and natural resource management

General Strategy

The strategy proposed for this program will be to integrate the proposed research on methodology development and organizational innovation and capacity building by the program into ongoing projects of the collaborating institutions The Planning Meeting held by the systemwide initiative identified a promising body of initial work which can strengthened further advanced and united under this systemwide umbrella Incorporating participatory research methods and gender analysis into ongoing research will enable partners to accomplish results by conducting systematic comparisons of new approaches in contrasting environments to different types of technology development and with diverse user and stakeholder groups This will provide results on the use of these methods which command respect and ensure visibility

The Systemwide program provide a framework for comparing results obtained from participatory research and gender analysis This collaboration in comparative analysis will produce results not achievable by individuals or projects working in isolation Box 2 shows pay offs to joint efforts identified in the Planning Meeting The introduction of participatory methods and gender analysis into ongoing research projects will involve training for this purpose so helping to multiply capacity for use of the methods within NARIs NGOs and other direct partners

Box 2 Advantages of working together perceptions of participants from IARCs NARIs NGOs and Grassroots Organizations in the SWI Planning Meeting

Can develop guidelines for using methodologies and organization innovations on the basis of comparisons among technologies user group and agrosocioeconomic environment

Can increase R&D capacity by joint work and accelerate a common learning process derived from sharing global experience

Joint work solidifies partnerships and the capacity to build them this includes IARCs learning from NGOs

Joint work allows for more cost effective divisions of research labor

Background and Justification

Demand for Participatory Research and Gender Analysis

It is now well recognized that formal sector research including that of the CGIAR should be impact oriented and focussed on utilization of results Donors research managers and scientists who are concerned about the extent and pace of impact are now increasingly articulate about the need for participatory approaches to achieve this goal

Participatory plant breeding

Methodology to enable plant breeders to use participatory R&D in the preadaptive stages of research is perceived by IARCS NARI s AND NGOs as needed to improve the impact of plant breeding in heterogenous environments

The incorporation of participatory methods into plant breeding began in the mid 1980 by involving farmers in the evaluation of new materials The gap between users and breeders criteria for acceptability of new plant types identified through participatory research is stimulating plant breeders to introduce user participation at earlier stages in applied research to the point where farmers are selecting parents and individual plants from segregating populations As a result participatory methods are perceived by some plant breeders as comparable to biotechnology techniques in opening up new frontiers in breeding (Kornegay et al 1995 Ceccarelli et al 1995 Zimmermann 1995 Hardon 1995 Iglesias and Hernandez 1994)

Drawing on these experiences a workshop on Participatory Plant Breeding Approaches was sponsored by IDRC IPGRI FAO and the Center for Genetic Resources the Netherlands in July 1995 The participants included plant breeders and social scientists from CGIAR NARIs and NGO programs They identified the need for alternative approaches to classical centralized plant breeding to address genotype environment interaction in highly heterogenous environments typically those in which resource poor farmers in developing countries are found Because there are no established guidelines on how to achieve this a number of research needs were identified

Specifically the workshop identified a need for comparative analysis of different approaches including conventional as well as participatory and for building on farmer or community breeder systems This analysis is needed to guide choice of the most appropriate breeding approaches for different circumstances and for different types of crop (self pollinated open pollinated or clonally propagated) The comparative analysis of methods should address their rate of success the time it takes for materials to reach farmers and the costs of different approaches The workshop participants proposed that

> The CGIAR could play a major role in methodology development and be able to transfer such methodology to the various partners in the processes The CGIAR could establish an inter center working group on participatory breeding methodology to provide some guidance in this and to pool resources
> (Workshop proceedings IPGRI 1995)

Box 3 Key issues to be addressed in participatory plant breeding

Can participatory plant breeding combine indigenous and scientific knowledge by working with farmers in a way that maximizes genetic diversity and increases productivity?

What are the most appropriate technical breeding strategies (including biotechnologies) for partnership between farmers crop selection systems and formal breeding programs to achieve this goal?

Need for training of partners in participatory breeding was also identified by the workshop participants for institutional breeders within the CGIAR and in NARIs and for NGO s farmer organizations and seed producers to improve the type of partnership which is integral to the new CGIAR

> Many NGOs are already involved in such training activities at the local level but often lack adequate knowledge and easy access to sources of information Many institutional programmes see such activities as competing with rather than

complementing their own efforts to strengthen and expand the institutional system of breeding and seed production These problems are at the root of the often strained relationships between CGIAR centers NARIs and NGOs They call for fundamental changes in attitudes with awareness training at all levels especially at the level of institutional management (Workshop proceedings IPGRI 1995)

At the September 1996 SWI Planning Meeting the plant breeding working group took another step forward in defining the rationale for this interinstitutional collaboration The group elaborated a framework for participatory approaches in plant breeding research and highlighted the need for institutional models to support decentralized breeding on a broad scale Participatory breeding needs better targeting to specific users and agrosocioeconomic environments and new kinds of support services which ensure that resource poor farmers benefit from the products of participatory breeding (eg the seed sector) (See Fig 3)

Box 4 Key organizational questions to be addressed for participatory plant breeding

What degree of decentralization of research is needed to reach resource poor farmers

What institutional arrangements can achieve this decentralization most cost effectively?

What strategies provide farmers with access to the products of participatory plant breeding what should be the balance between the formal seed sector and farmer led seed systems?

The need to better differentiate just *which users should participate in plant breeding* and to identify *which users and stakeholders actually benefit* when participatory plant breeding approaches are used was identified as one of the important methodological challenges for the systemwide program In the SWI Planning Meeting the working group addressed the need for methodology to incorporate user differentiation and gender analysis into participatory plant breeding ie direct users seed producers processors and consumers Only some ongoing participatory breeding projects incorporate gender analysis and user differentiation although it is recognized by most that women are often plant breeders in small farm production systems responsible for domesticating wild species selecting germplasm and saving seed

Integrated Natural Resource Management Research

The application of participatory approaches (similar to that which occurred in plant breeding) is now underway in natural resource management (NRM) research in a broad array of organizations A comparable disquiet is evident over the difficulty of achieving impact for this

research in heterogeneous fragile environments with diverse client groups In these fragile environments and the supposedly robust and more favorable production environments the technologies required to sustain agricultural productivity growth require informed sophisticated and often collective management decisions by farmers Thus a similar call for participatory approaches to address these difficulties is now being made

As in plant breeding participatory methods and gender analysis can be applied to NRM to harness local knowledge and users criteria for acceptability (which may often be women s knowledge and criteria) These are important for the design of flexible or plastic NRM prototypes or management options They are key as well to a process of involving diverse and less visible stakeholders

Close linkage between farmers and researchers and farmer involvement in the process of technology design has been identified as essential in soil water natural resource management research (TAC 1995 Annex 1 53 Greenland et al 1994 SWNM initiative proposal) Case studies of participatory watershed management identify a participatory approach to technological innovation as well as to social organization as an important element of success (Pretty et al 1995 Ashby and Beltran 1996 forthcoming) This view was fully supported by participants in the September 1996 SWI Planning Meeting NRM working group

The SWI Planning Meeting in September 1996 was the first opportunity for a group of NRM practitioners from the CGIAR and other institutions to analyze the need for collaborative work on development of participatory methods and gender analysis for natural resource management research The NRM research working group focused on improving the management of resources rather than material technologies The group emphasized need for participatory experimentation and the development of interactive databases which include indigenous knowledge about NRM and which can be readily accessed by stakeholders (including farmers) Local capacity has to be enhanced through participatory approaches for analyzing resource constraints monitoring change in natural resources and adapting technologies to changing environments

Organizational innovation for participatory approaches was also identified by the NRM working group as a central issue needing further work Different types of technology and resources have to be managed at different scales by stakeholders with often diverse and even conflicting interests A challenge in NRM research is to identify or help catalyze effective organizational arrangements at different scales and to ensure inclusion of different user and stakeholder groups throughout

Box 5 Key management and organizational questions addressed by participatory natural management research

How can capacity for user participation in monitoring dynamic resource trends at different scales (field farm community level and beyond) be enhanced?

What are appropriate ways to conduct participatory assessment or experimentation for the bulky technologies which are often characteristic of NRM?

How should suitable strategies be developed for building participation in local organizations at the scale needed for resource management and which are themselves sustainable and include the full range of relevant stakeholders?

The NRM group gave high importance to the use and development of participatory methods in a learning process approach (see Fig 1) Developing tools and guidelines in a learning process approach is particularly important in NRM because there are a range of complex trade offs between conservation and productivity acceptable to farmers and to other stakeholders in natural resource management Acceptable solutions need to be negotiated and are typically highly location specific This makes the identification of technological as well as institutional recommendations difficult for centralized research and policy makers Instead mechanisms methods and tools have to be provided that will enable stakeholders to develop locally acceptable recommendations

The NRM group prioritized two main thrusts for future work

An assessment of the state of the art in applications of participatory research and gender analysis to NRM problems This would define where the main opportunities are for further work the types of NRM technologies and management options and the types of environment

Conduct case studies of action research for comparative analysis of the process of implementing participatory approaches and gender analysis in the NRM research projects This would involve monitoring a learning process approach emphasizing capacity building and operationalizing new methods and organizational approaches Comparative analysis of a variety of approaches will provide guidance to researchers and farmers on ways to build on their local knowledge expand their management options and develop processes for local and extra local management organizational innovation and negotiation

Relationship to Ecoregional Research

The CGIAR ecoregional concept involves multidisciplinary research on the sustainable improvement of agricultural productivity to achieve demonstrated impact in common sites by joining efforts among institutions with complementary expertise

This research program will forge a specialized resource for ecoregional initiatives to draw on Integrating the proposed methodology development with ongoing CGIAR projects will include collaborative research in benchmark sites of ecoregional programs This will bring world wide expertise in participatory research to bear on ecoregional needs and the training activities will strengthen the capacity building function of ecoregional programs Management support for coordinating this proposed program with NARIs will be sought through the ecoregional programs

Use of participatory methods in CGIAR and collaborating national programs will help to promote effective communication and collaborative work with NGOs and grassroots organizations necessary to ecoregional partnerships

Relationship to the CGIAR Program for Gender Analysis

At present use of gender analysis in the CGIAR remains experimental and has not yet resulted in significant changes in research practice although a few centers are making some progress As a result the institutional commitment to main streaming gender analysis within the CGIAR Centers remains fragile (Report of Gender Program 1995 14 24)

Continuation of the CGIAR Gender program has been proposed to encourage support and build on the progress to date Recognizing that gender analysis is one dimension of the user perspective in technology development and works best in this context (CGIAR Gender program proposal October 1995 1) the program of research proposed here would support and strengthen the effectiveness of efforts to institutionalize gender analysis in the CGIAR system in two ways

> by providing the Gender Analysis program with an avenue for institutionalization which maintains its visibility and at the same time links its activities firmly to core research activities of the Centers through a systemwide initiative
>
> by linking use of gender analysis to effective demand among CGIAR scientists for preadaptive adaptive as well as adaptive participatory R&D approaches to plant breeding and NRM research

At the mid term meeting of the CG in Jakarta in May 1996 the Gender Analysis Program made the following proposal to the participants in the donor meeting on this SWI The proposed systemwide program will incorporate the resarch related gender analysis functions of the CG Gender Program while the management and staffing related functions of that program would continue to be conducted by the CG Secretariat

It is proposed here that the Gender Analysis Program will maintain a visible identity within the systemwide program with a separate budget to support capacity building activities and to contract the consultant who would manage its activities These activities would continue to involve advising CG centers and their partners on the incorporation of gender analysis into their research programs networking with IARC focal group members as well as facilitating training dissemination of training materials and consultancies for this purpose

A new dimension of the Gender Analysis Program would be its membership of the Gender Analysis Working Group of the systemwide program and participation of the consultant in providing methodological input and analysis by this group to the empirical research studies of the systemwide program

Involvement of the CG Gender Analysis Program in implementing the core research agenda of the CG and its partners through this systemwide program will provide the mechanisms for firm institutionalization of gender analysis in the CG with the inception of the Systemwide Program in 1997

Expected Outputs of the Systemwide Program

The plan of work developed by the working groups in the systemwide initiative Planning Meeting identified six types of expected outputs

1 Methods for participatory approaches in plant breeding developed and evaluated

2 Methods for participatory natural resource management research assessed and developed

3 Strategies for including gender sensitive participatory methods in research assessed developed and institutionalized

4 Organizational innovations for institutionalizing participatory approaches operationalized and evaluated

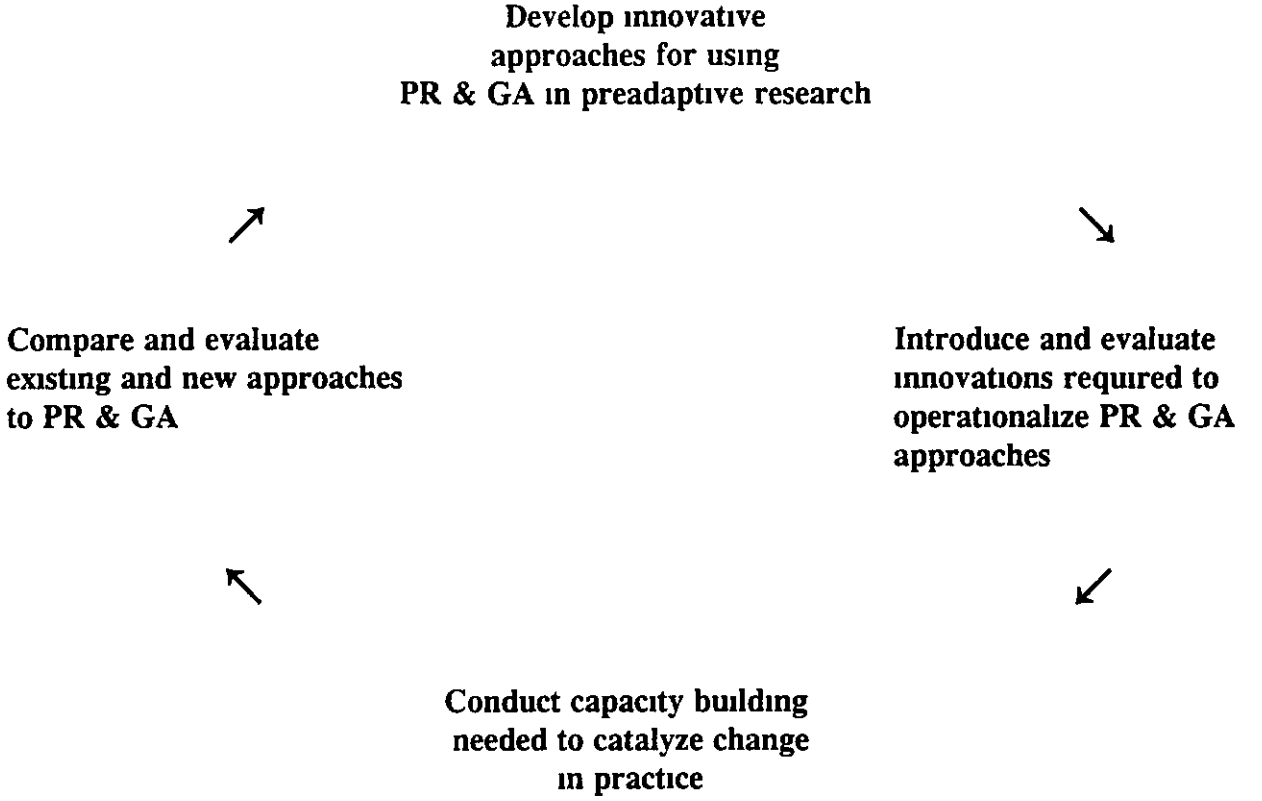
5 Capacity for participatory research and gender analysis further developed in the form of a critical mass of expertise in participatory research and gender analysis innovative approaches to capacity building operationalized

6 Procedures for building new partnerships among the IARCs NARS NGOs and farmer groups realized to utilize effectively complementarities among partners and to accelerate learning about participatory research and gender analysis

Program Strategy

The expected outputs will be achieved by integrating method development organizational analysis and capacity building for participatory research and gender analysis (PR&GA) in a learning process approach (Figure 1) The elaboration and integration of these four elements is described in the section Description of Expected Outputs The learning process approach is a common strategy adopted by the SWI participants

Figure 1 Program Strategy A learning Process Approach



Organization of the Systemwide Program

The program of work required to achieve the expected outputs identified by the participants in the SWI Planning Meeting exceeds the individual capacity of any one of the cooperating institutions The research program has been designed to be implemented through collaboration among IARCs NARIs NGOs and grassroot organizations This collaboration demands transparent and cost effective organization Principles of organization were developed by the Partnership task force at the SWI Planning Meeting and endorsed by the participants

Organizational principles include

Decentralized partnership among IARCs NARIs NGOs and GRO s which are a locus of *practitioners* of participatory research Practitioners introduce applications of the methods into their ongoing plant breeding and/or natural resource management projects consistent with their priorities using the agreed upon common strategy and workplan for comparing applications across different fields

Three working groups participatory plant breeding participatory natural resource management research and gender analysis Working groups involve practitioners from IARCs NARIs NGOs GRO s and indigenous research systems in implementing studies consistent with the common workplan developed in September 1996 Working groups include a mix of biophysical and social scientists Working group members need to meet face to face in periodic research workshops or site visits and to select members to contribute to the systemwide seminars

Planning Group composed of eight elected members

Three representatives one elected from each of the three working groups
Four representatives elected from each of the four stakeholder groups in the initiative NARIs NGOs IARCs (not including the convening center) and donors
One member from the Convening Center

The Planning Group was mandated to obtain input from the working groups to finalize guidelines for the inclusion of projects in executing the workplan and to define the information exchange and capacity building strategy for the program A steering committee elected from members of the planning group is responsible for operational tasks delegated by the Planning Group and includes one representative each from the working groups and the Convening Center

Management of the program Overall execution coordination and technical and financial reporting will be the responsibility of the implementing agency for the program CIAT The main CGIAR partners will be IRRI CIMMYT and CIAT and ICARDA CIAT has assigned a staff member to support the program s coordination

Projects submitted for membership by participants in the working groups and screened by the Planning Group for consistency with Program Guidelines (shown in Box 6) will be the mechanism for carrying out the plan of work described in detail below and in the work breakdown diagrams in Figures 3 and 4

Resource allocation The workplan designed by the working group participants will be the mechanism for allocating grants to the Systemwide program These funds will be allocated to activities in the workplan by members representatives in the Planning

Group Grants to the program will be used to cofinance ongoing projects to execute elements of the Program s Workplan Working group members may seek additional funding for projects with Program endorsement and assistance and will manage these resources themselves

Box 6 Proposed criteria for inclusion of projects in the systemwide program *

Project proposals should specify

1 Participatory approach plan for how the project will work with farmers organizations or groups of farmers

2 Interinstitutional linkages involvement of at least two institutions

3 Clear agreement from all partners on the resources each will allocate to the project

4 Explicit consideration of gender representation (of partners) and gender issues in the proposed research

5 Plan to involve men and women in implementing the research

6 Strategy for getting access to multidisciplinary teams which take into account social science and natural science skills

7 Plan to build on farmers skills

8 Clearly defined time frame

9 Monitoring and evaluation plan

10 Clear definition of the roles of partners in research and capacity building

11 Statement of what project will offer to the systemwide program

12 Statement of what project expects from the systemwide program

13 Statement of resources available and resources required

14 Plan for sustaining project activities at community level after phasing out of project

* Task Force on Partnership Systemwide Initiative Planning Meeting 9/14/96

Activities

Scientific conferences and information exchange

International seminars and papers for this will be the main mechanism for reporting progress on the workplan The systemwide Planning Meeting in September 1996 was preceded by a three day seminar in which participants in the plant breeding natural resource management and gender working groups assessed the state of the art formulated methodology development needs and defined organizational concerns (see Proceedings of the International Seminar on Participatory Research and Gender Analysis for Technology Development 1996 forthcoming) Working groups will conduct regional workshops to help partners monitor empirical studies exchange results of work in progress adjust research methods together and visit sites Regular email bulletins and information newsletters circulated thrice yearly have been proposed by the seminar participants as important for ensuring active exchange among globally dispersed field researchers

Dissemination of guidelines for using participatory approaches and gender analysis

The publication and distribution of results will include regular international seminars and working group proceedings manuals on specific methodologies results of empirical studies in journal and book form to a broad audience including Centers NARIs NGO s and grassroots organizations

Capacity Building

Participants in the SWI Planning Meeting identified capacity building as an integral part of the general strategy for the proposed program Capacity building activities will involve the following

Monitoring and evaluation of the operationalization of novel gender sensitive participatory approaches in plant breeding and NRM research in a learning process approach This will involve capacity building among the participants in these empirical efforts and will generate lessons to be shared in the systemwide working groups and international seminars

In the course of implementing empirical studies working groups will identify common needs for training in participatory research approaches and gender analysis The program coordination will help organize and fund inputs for this training using resources of the program for this purpose Every effort will be made to piggy back training and workshops onto partners events organized for their ongoing projects

Consultancies on participatory approaches or gender analysis will be supplied drawing on resources donated to the program and expertise marshaled by the systemwide program Demand for and supply of technical advice will be identified through the working groups

in the course of conducting the empirical studies and may include requests from entities not actively involved in these studies The program coordination will help network requests for technical advice with providers through the working group members

Empirical studies

The plans (see Fig 3 and 4) developed by the Working Groups include two types of empirical studies to assess and develop participatory approaches and gender analysis for preadaptive plant breeding and NRM research One involves controlled comparison of different strategies ie the same breeding populations are managed with and without farmer participation This enables breeders to evaluate the changes in genetic variation as well as the degree of acceptability and rates of adoption which result from the classical and participatory breeding approaches A second approach involves case studies selected for action research and process monitoring methodology development integrated with capacity building for participatory NRM research lends itself to this approach

Some of the key components of the empirical studies include

Identification and differentiation among the relevant user groups to determine who should participate and at what stages of the research process Better methods are needed for assessing ex ante if there will likely be a differential impact of a proposed feature of a technology for different users men or women market or subsistence oriented farmers producers or consumers

Participatory ex ante evaluation of alternative technologies including indigenous practices to obtain feedback from diverse users and stakeholders about their different criteria for acceptability Participatory evaluations can be carried out in existing on farm trials experiment stations in farmers fields or in broader community resource management units and can involve numerous contrasting types of user groups The extent to which farmer knowledge helps to reorient technology design can be assessed Method development is needed to enable farmers and scientists to evaluate the potential acceptability of prototype technological options in early stages of research

Experimentation to test selected technological options experiments conducted in the early stages of research may include treatments designed managed and analyzed with user participation alongside researcher managed treatments Methods are needed for participatory experimentation with large diverse breeding populations and with resource management at the landscape scale or in complex situations which defy replication

Indigenous experimentation is an important component in the methodology development studies Monitoring local farmer experimentation provides a check on the validity of information obtained from ex ante evaluations and in experiments It may also open up avenues for redirecting research altogether In plant breeding this involves study of the

local use of biodiversity and farmer own breeding strategies In natural resource management this involves monitoring farmer introduced resource conservation practices and the evolution of management strategies Methods need to be developed for participatory monitoring of indigenous experimentation by local people and for defining entry points where formal science might strengthen farmers own research capacity

Innovation to assess and test which organizational options facilitate cost effective participatory approaches and gender analysis and which facilitate scaling up these efforts

Gender analysis for comparison of results obtained with and without the participation of women in a specific context provides empirical evidence of the effects of including gender analysis on the design of the technology on feedback to researchers about user preferences and on rates of adaptation and adoption of the resulting technologies

Cost benefit analysis can be carried out to assess the quality and quantity of human resources and other support costs required for different approaches including conventional participatory and indigenous experimentation Participatory approaches to provide this feedback need to be developed and the concept of costs and benefits needs to be broadened to include social as well as grassroots criteria

Monitoring of rates of adaptation and adoption in the different user groups are monitored to provide data on the distribution of benefits of the different approaches Participatory monitoring and impact assessment methodologies are needed which can rapidly feedback information to partners about farmer adaptations which can be readily incorporated into technology design to improve adoption and impact

Operationalizing new practice through capacity building and institutionalization Strategies for motivating stakeholders to use participatory approaches and gender analysis as well as for enhancing their capacity to do so need to be built into the conduct of the research itself Action research is an iterative process whereby all partners learn by doing Early attention to capacity building facilitates institutionalization of relevant results **Development of a framework for comparative analysis of results from empirical studies** A common framework for comparative analysis of the empirical studies is being developed jointly by the researchers involved in the Initiative One goal is to identify the circumstances which render participatory approaches more or less useful and to generate widely applicable guidelines for the use of the methodology An explicit focus on site crop technology characterization will help define which participatory methods and organizational forms give the best results under what type of circumstances

Some elements of a common framework are illustrated in Box 7

Box 7 Example of elements of a common framework for comparative analysis

Parameters to compare sites and projects

typology of technologies to be contrasted eg short term productivity (varieties) vs long term conservation (NRM) technologies

typology of agroecosystems or environments eg highly heterogeneous vs uniform favored vs unfavored

typology of indigenous crop development and natural conservation systems

distinguishing features of local institutional context eg strong local groups and community cohesiveness vs weak or absent local groupings

Parameters for methodology assessment across fields of research

techniques of participatory research and gender analysis to be used in different situations

stages of the learning process to be compared (Figure 1)

types of stakeholders who need to be directly and indirectly involved

variables to be monitored to assess costs and rates of success

Workplan

Five year workplan

Each of three working groups in the Systemwide Initiative Planning meeting developed a workplan showing outputs (or expected outputs) activities and indicators of progress The proposed activities address the six expected outputs presented in summary form earlier which are now described in detail and related to the proposed outputs (shown in each section below in italics) and activities of the working groups shown in Figures 3 4 and 5 at the end of this section

Description of expected outputs

1 Assessment and Development of Participatory Approaches to Plant Breeding

Workplan Outputs

Assessment and development of effective participatory methods in plant breeding with focus on
farmers breeding
plant selection (segregating lines)
variety selection (fixed lines)

Beneficiary groups more accurately involved & targeted in participatory breeding through methods development for involving direct & indirect stakeholders

Most of the existing applications of participatory approaches in plant breeding involve farmers in relatively downstream selection of advanced lines or finished varieties Preadaptive participatory research in breeding is an area where methodologies are still incipient At present it is difficult to say what degree of user participation is appropriate at what level of the breeding process and for which environments To develop methodological guidelines targeted at specific crops (ie self pollinated open pollinating clonally propagated) and contexts the proposed program will conduct empirical studies along the lines described above One set of case studies will explore how most effectively to involve farmers in the formal research process a second set of cases will look at the role of scientists in strengthening farmers own breeding efforts

Empirical studies involve farmers in selecting parents in making selection from segregating populations in evaluating advanced lines on station or on farm and in decisions about seed production of preferred varieties At each stage in this process the different selections made by breeders men and women farmers can be contrasted Once farmer selection strategies are understood ways in which breeders can enhance these can be developed The risks of early farmer involvement as well as the potential benefits (e g in terms of production yield stability and genetic diversity) will be examined on a stage by stage basis In some crops (eg rice cassava) use of biotechnology tools such as molecular markers can be important for linking farmers knowledge with advanced breeding techniques

The program will collaborate with ongoing breeding programs and involve a cross section of IARC/NARI/NGO/Farmer Groups eg rainfed rice pearl millet barley beans maize maize/beans in association cassava The participatory plant breeding group has already received signals of interest from potential collaborators in Ethiopia India Nepal the Philippines and Syria

Box 8 **Specific outputs from methodology development in participatory plant breeding**

Participatory research methods and gender analysis tools suitable for integrating farmer crop development systems with advanced breeding techniques

Participatory breeding strategies refined for a cross section of species with guidelines on appropriate breeding populations field techniques and suitable biotechnology tools

Knowledge and skills of rural men and women specialized in germplasm management are recognized strengthened and linked to research

Varieties acceptable to farmers which incorporate traits derived from local land races and global germplasm

2 Methods assessed and developed for participatory natural resource management research

Workplan Outputs

Synthesis of the state of the art in applying PR/GA approaches in NRM research for different types of technologies comparing three scales of management (field community and watershed)

Improved crop and natural resource management strategies incorporating better use of existing and new PR/GA methods at different scales of management developed and disseminated

It is important to note that the NRM working group is at a different stage in the development of their workplan from the participatory plant breeding group The NRM researchers within the SWI need a period to analyze and critically assess available evidence and insights for applying PR/GA to natural resource management subfields some of which operate at very different scales the field farm community and the watershed This work needs to be facilitated through email exchanges systematic literature review and commissioned papers on specific organizational and methodological challenges Conference for the purpose can be piggy backed onto already scheduled regional meetings in Africa Asia and Latin America

Some of the toughest methodological challenges for participatory NRM research concern how to link farmers knowledge and interests with those of other stakeholders at different scales

field farm community and supra community including the watershed NRM technologies (e g soil conservation practices nutrient management integrated pest management) are often knowledge based requiring collective management decisions and practices The knowledge and management intensity of these technologies requires that farmers participate early in the design of prototypes as well as in their location specific fine tuning Farmer involvement helps researchers to understand how stakeholders perceive tradeoffs between production and conservation and the acceptable allocation of costs and benefits to different stakeholders

In designing a workplan for comparative analysis the NRM working group agreed that a focus on *resource user management* was essential As the management scale widens the number and diversity of stakeholders (including external stakeholders) is likely to increase as is the need for collective or negotiated actions and resolution of possible conflict over resources Innovative organizational arrangements methodology for participatory resource monitoring by users as well as researchers in the short and long term and increased capacity of resource users to adapt to changing circumstances were seen as priority areas for further work in the proposed program

The NRM working group took emphasized the use of a learning process approach (Fig 1) in which improvements in participatory methods and in organizational capacity are operationalized and analyzed together To start this process of mutual learning the NRM working group identified as the first task an inventory and assessment of current uses of participatory research and gender analysis in NRM research The discussion of these concrete experiences at more focused regional meetings will promote a shared understanding of problems and a baseline for further research This state of the art synthesis will be the first output of the NRM Working Group From this base the working group will specify cases which will systematically develop test and compare participatory approaches in different contexts

Box 9 Specific outputs from participatory NRM method development

Current practice in applying gender analysis and participatory approaches to NRM research synthesized to identify method gaps

Methods assessed and developed for user participation in design of knowledge intensive technologies

Methods for participatory resource monitoring by stakeholders at field farm community and watershed scales

Methods assessed and developed for encouraging collective action conflict resolution and negotiation at different scales

Technologies acceptable to farmers for increasing productivity while protecting the environment

3 Strategies for including gender sensitive participatory methods in research assessed, developed and institutionalized

Workplan Outputs

Effective methods and capacity developed for using gender analysis

The costs and benefits of using gender analysis in technology development assessed

Inclusion of a gender perspective and gender analysis into the core research programs of the CG is a central objective of this program The Gender Working Group will a) intergrate gender analysis capacity building and the development of novel approaches to gender analysis into the empirical studies conducted on plant breeding and NRM b) systhesize the implications for gender analysis of results from the empirical studies with respect to its impact on technology design adoption targeting poor rural women and research planning c) contribute to capacity building provision of technical advice and dissemination of results on gender analysis to a broad audience of IARCs NARIs NGOs and GROs through the systemwide program activities for this purpose

Women play a vital role in agriculture and food security in developing countries Research on time budgets has shown that women work longer hours than men in every country studied Women account for more than half of the labor required to produce the food in Asia and as much as three fourths of the labor in Africa They are fully in charge of post harvest operations seed selection and preservation and food processing activities With increasing male migration in search of non farm employment women s role as farm managers has been growing

Women s knowledge of agricultural practices and the constraints to increasing their productivity need to be incorporated into planning this includes involvement of women in selection and evaluation of improved germplasm seed management practices appropriate mechanical technologies and management of natural resources

Methods are needed which will enable user groups to rapidly assess for themselves what type of people among them should participate in technology development Rapid self diagnosis needs to be made of the relevance of different attributes such as wealth age gender or particular expertise and the need to have separate or mixed groups of participants for reliable user input to a given technology In some regions appropriate methods must be developed to engage women s participation where this is a new experience or there are specific constraints In NRM research methods need to be assessed for identifying diverse stakeholders including different kinds of women and bringing them into the relevant design of technology options organizational arrangements and approaches to capacity building

Other methods are needed to enable users to monitor gender differentiated effects of introducing new germplasm or resource management practices Participatory diagnosis monitoring and assessment of the likely differential impact of technologies being tested on a user group could provide powerful feedback to research in a low cost fashion It is also an essential component of the learning process

Comparison of results obtained in PB and NRM projects with and without the application of gender sensitive participatory research methods will provide empirical evidence of the utility or value added of identifying and including particular groups Researchers need cost effective ways to validate and assess the usefulness of such information obtained from a participatory process in terms of successful technology design and adoption (reaching the right users) targeting particular groups (such as poor rural women) and in achieving welfare and social equity objectives Streamlining this process so that it is reliable and replicable is essential for adoption of such methods by NARIs

4 Organizational innovations for institutionalizing participatory approaches operationalized and evaluated

Workplan Outputs

Effective organizational forms for operationalizing participatory breeding identified and developed in the research process

User access to products of participatory breeding assured through identification of effective organizational forms and links to supporting seed services

Organizational capacity to use PR/GA methods in NRM research improved with a focus on farmers local institutions individual scientists and extension workers and research and extension institutions

Effective use of participatory approaches and gender analysis not only requires appropriate methods but also suitable organization The organizational requirements of participatory research need to be examined for two reasons First user participation suggests that research may have to be decentralized to incorporate different user groups Second successful adoption of NRM technologies may depend less on the technologies *per se* that on organizational innovations in the way stakeholders collectively manage their resources

In terms of the prospects for decentralizing research the systemwide working group on participatory approaches in plant breeding recommended study of the alternate divisions of labor within the breeding process These studies will assess the cost-effectiveness of different organizational forms The implications of increased involvement of different partners also need to be assessed for instance what might be the advantages or constraints for each collaborator if farmers groups or NGOs take a lead role in adaptive research to permit a vastly increased scale of testing? Other questions which urgently need to be answered include the extent of decentralization required for a particular crop and locale the financial and logistical means by which decentralization can be achieved the implications of decentralization for research quality the implications of decentralization for the design of technology support services eg seed multiplication

Participatory natural resource management needs to build on local organizational capacity to manage collective resources and to monitor resource trends Local structures whether indigenous or introduced may provide the key to scaling up location specific efforts to achieve the large coverage demanded by watersheds hillsides or desert expanses Methodology development involves providing tools to define exactly what scale of resource management is functional and to strengthen the development of durable organizational mechanisms at that scale

Box 10 **Specific outputs from analysis of organizational innovations and links within a participatory research perspective**

Identification of cost effective organizational forms for different kinds of decentralized plant breeding research

Options for organizational innovation and links for managing natural resources at different scales

Strategies for strengthening and catalyzing local and durable organizations which can lead site specific management of resources

Analysis of the ability of the formal and informal seed sector to deliver the products of participatory plant breeding

Strategies for scaling up knowledge intensive technology development and ensuring its spread

5 Capacity for participatory research and gender analysis enhanced and innovative approaches operationalized a critical mass of expertise in PR/GA developed on the basis of practical expertise

The systemwide Planning Meeting adopted a learning process and capacity building approach to developing participatory research and gender analysis This capacity building approach to experimentation contrasts markedly with participatory rural appraisal (PRA) methods in which a tool kit of techniques is used in local communities mainly to extract research information needed to plan subsequent experiments or development projects

Capacity building activities include operationalising novel methods training and workshops on participatory approaches and gender analysis consultancies to provide technical advice on methodologies and the international seminars in which participants report progress on the workplan and exchange results These are described in the section on activities earlier in this document

The systemwide program will use donations to the program to finance the international seminars and training including training of trainers to multiply capacity for participatory research and gender analysis This training will be integrated to every extent possible with other courses and workshops of the participating institutions and will be open to a broad audience

Each of the three working groups (plant breeding NRM and gender analysis) will conduct workshops and may provide consultancies to support the implementation of the common

workplan For example the NRM Working Group proposes to conduct four regional workshops and one global workshop to carry out the synthesis of the state of the art in applications of participatory approaches and gender analysis to NRM research (Table 2)

6 Procedures for building new partnerships among the IARCs NARS NGOs and farmer groups realized to utilize effectively complementarities among partners and to accelerate learning about participatory research and gender analysis

The proposed Systemwide Program is a collaborative research effort among diverse partners The advantages of joining resources are many from the outset formal science will be effectively integrated with farmer based experimentation organizational as well as technical options can be explored through this program

IARCs NARIs NGOS and grassroot organizations are developing a model for working together effectively and ethically The program will provide a mechanism for involving grassroot client groups and organizations in research priority setting technology development and program evaluation with the CGIAR and its partners

Through the planning group they are formulating guidelines for research partnership jointly defining organizational procedures setting research priorities and will evaluate success at the program and project level together

Figure 2 **Project Overview**

Systemwide Initiative on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation

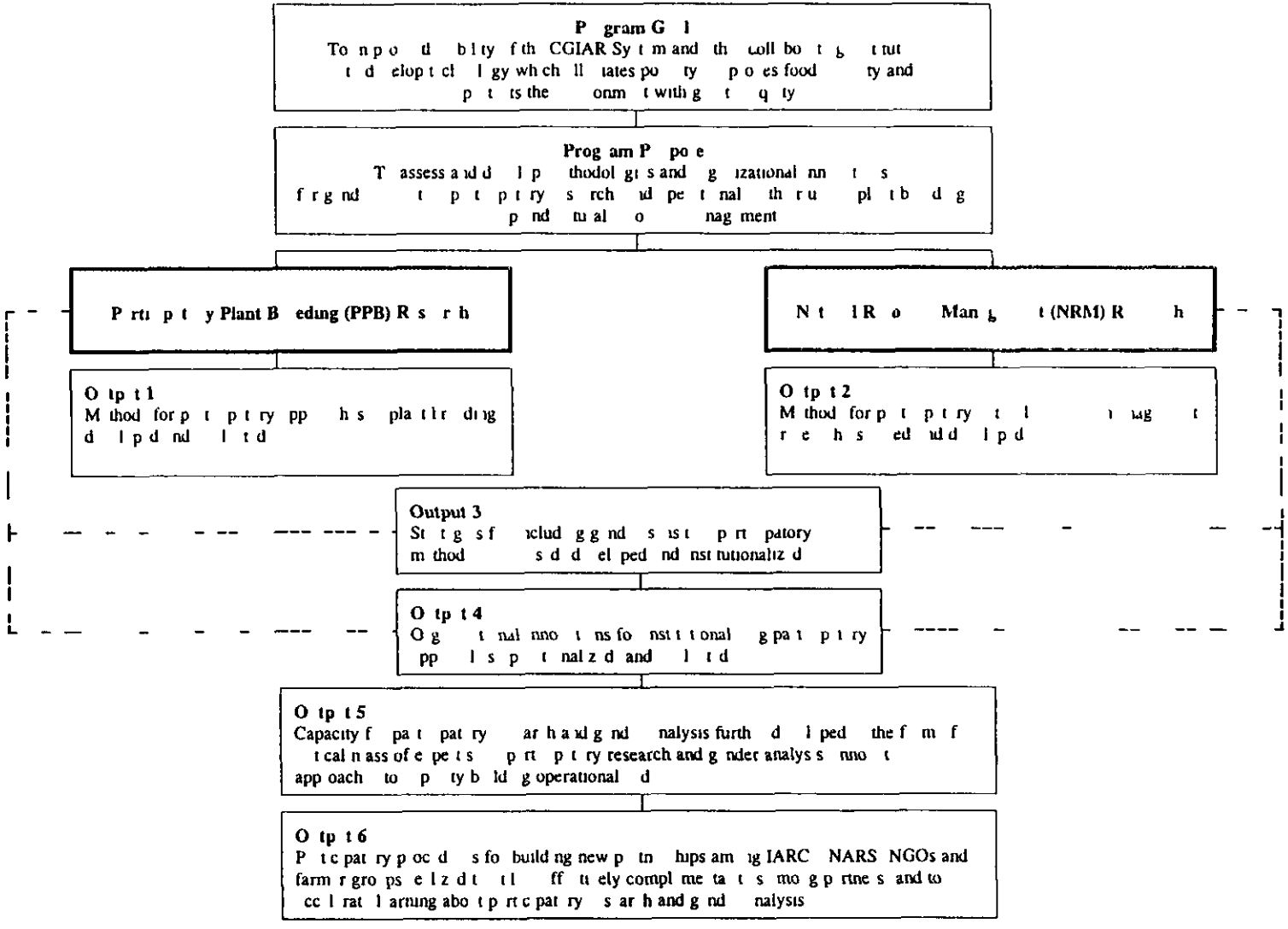
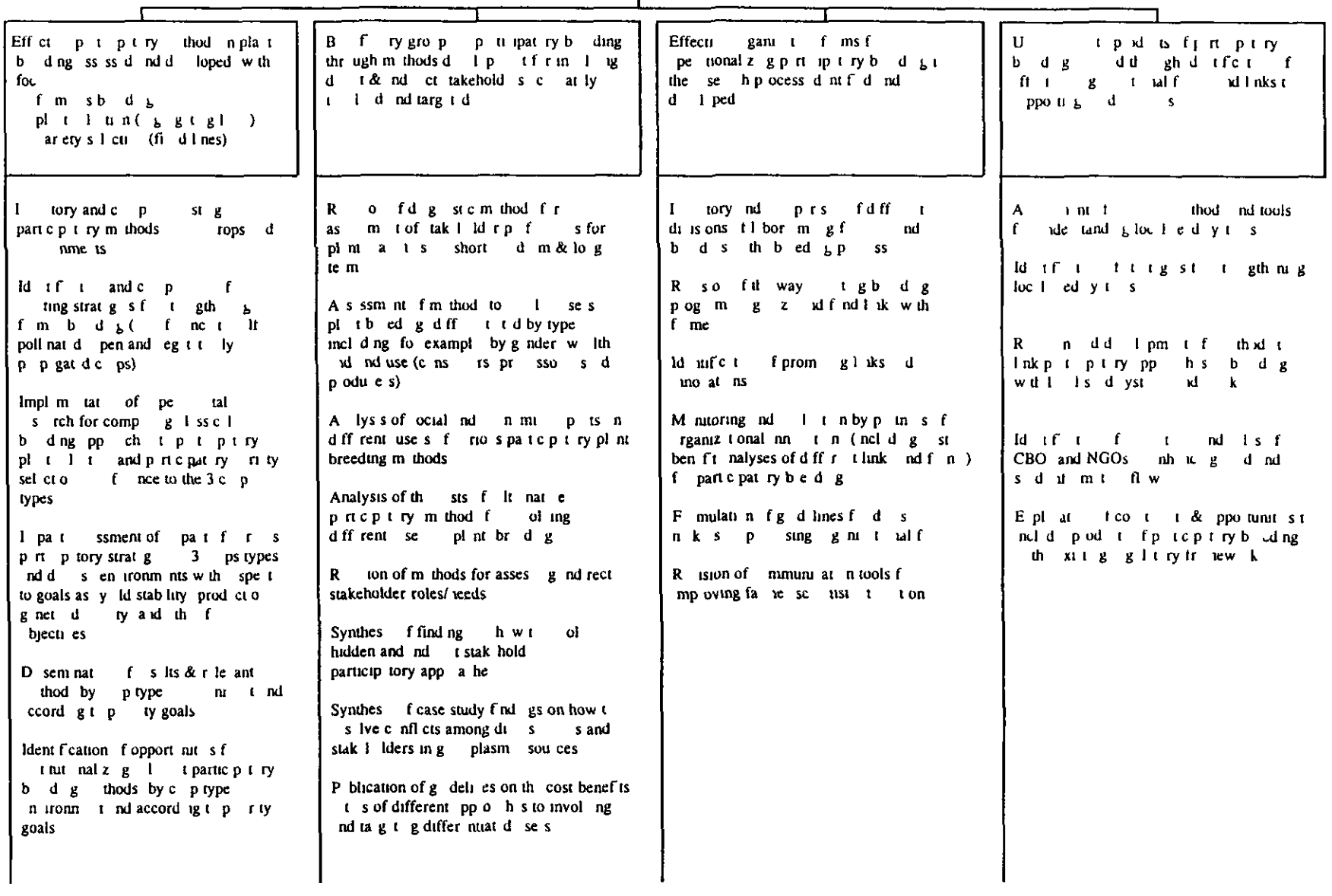


Figure 3

Systemwide Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation

Work Breakdown Structure for Participatory Plant Breeding Working Group



Systemwide Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation

Work Breakdown Structure for Natural Resource Management Working Group

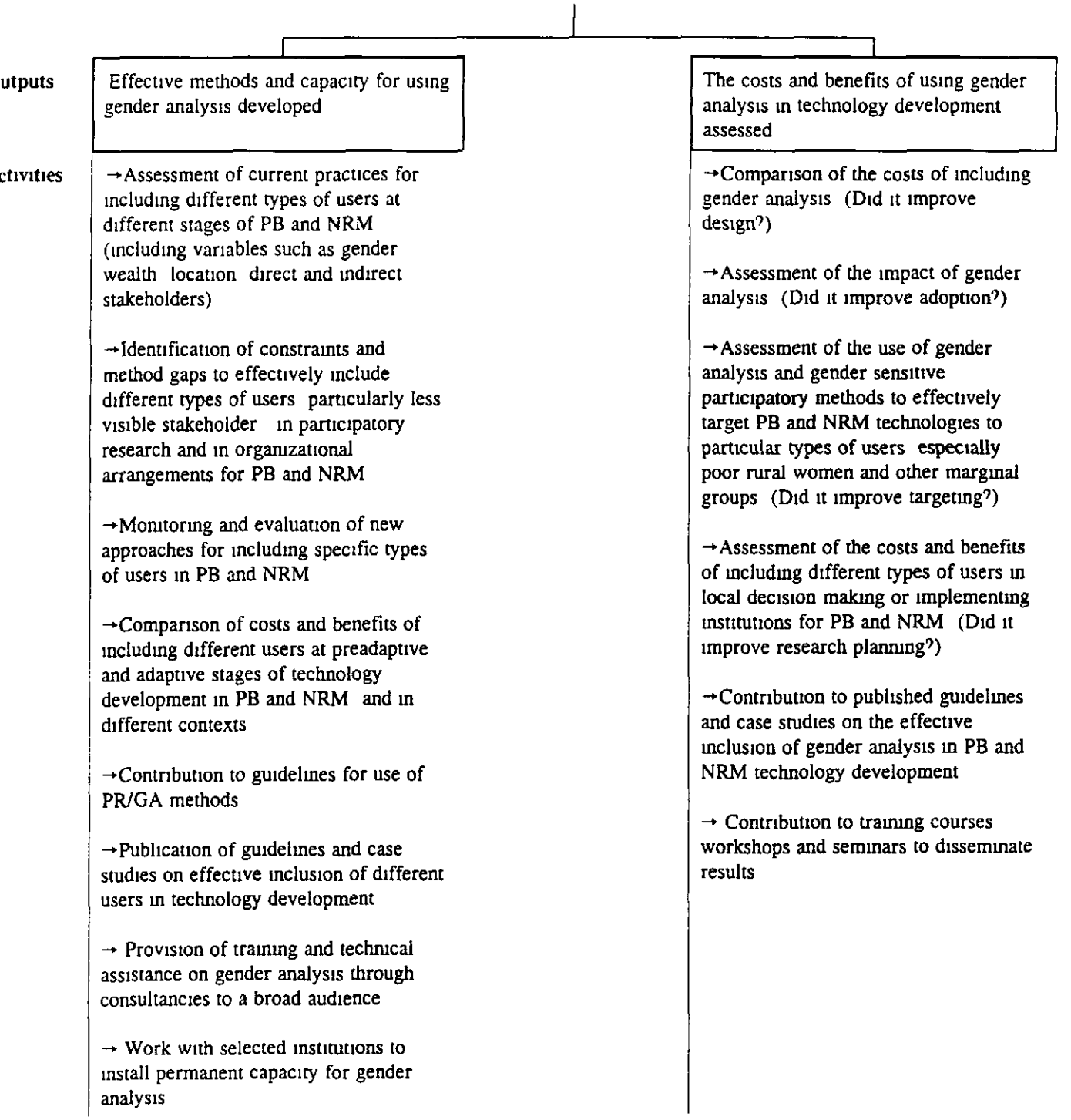
) tp t	Sy l f th t t of th t pply g PR/GA ppr l NRM se h f d ff t type f t l nol g s c ss th les f n an gen t o i pared	l p d p id iat l nag m t t g s nc rp r t g b tt r s f t g nd w PR/GA tl ods at d ff t sc l s of m iag m t d l ped and d s n iat d	O ga z t ial p ty t PR/GA m thods n NRM s h mp d w th a f s f m l l t t ns nd dual scie it sts and xt ns w k r nd h nd t nstit t	Eff t n tl od f i ol g g d d ff t t d id th d t nd d t k h ld NRM d l ped
\ t t e	→ l nt ry nd a s s n nt f s f e t PR/GA thod NRM sea h → l nt ry id s s i t f f t st tut nal g m nts fo p rt p t n f d ff ent se s NRM h nd p t → Id t f t f const t t n l d ng spec fi s r g ps in NRM h nd d ci iak ng → l t ry and ss s m nt f thods nd ind to s f d t rm ni g mp ts f PR/GA thod → R g nal w k hop b sed o nit l ito ies f a ti p j ts to p nd sses PR/GA methods nd org ni t nal g t → Global worksh p f p t t ne to d t fy th m thod g p and prioritize s f f nu g nd d l p g PR/GA methodology w th r spe t to specif types f NRM t hn l gy nd c l s of managem t → Id nt f cat on and l t f mbe f s s f thod logy d l pm nt nd capa ty b ld g id mpa t naly s (partners s tes t chnolog s scal regions)	→ D el p i nt d es t f new thod f p t p t y r c monito g by stak h ld s t f ld f ty w t h d nd th s l s → T t ng id d l pm t f w h ms f r jo g eso s pe m t w th h th nd w th f rmal NRM → E pe tat w th th d l pm t nd test ng of b ndl s f NRM pt by ch id loc l s → D l pme t f p t p t y thod wh h p nalyt t ls nd concept f unde stand g nd n anag g r so p oc s s → E l t f th of t sus t oll d pe me t t on f NRM t hi l g → D l pm t f mp d m thod f pe t n liz g PR/GA t l g scal fo b d c g nat l ce management → R g onal w ksl p f p t t ne s to omp t g at nd cont t d ff nt PR/GA t ethods and t t g s for NRM se ch → E p m tat o with t chn l gy opt ns and organizational ar ang ments to r du onfl t so c s → E luat o of d ffer t st t g f ncorporating d rse stakehold r int r sts into colle ti action → Publ t n f g d l ies f p d PR/GA pp oa h id g iz tional arra g e ts for NRM s h	→ D l pment mpl n nt t d e al t n f w pt f st t t ial t n and st ngth ni g f l l gani t nal g m ts fo PR/GA m tl od f NRM → E pe m t t w th d s he g e t d m tl ods f pl g nd r d c g so co fl t → M nit ri g of fa m t f loc l ty to loc l ty ha g d xt ns f PR/GA pp h w th nd bey nd tl study a → C mp ison f the sts nd be f t f m t f m nd v t nal sc l g p of th results of particip t ry NRM h → P m t f f m r p tat d s n n k g m tt s in r h nd xtens o rga uzat ns → P o s o of g d l nes f d m k s p m g g nizat ial opti s for str ngth ning the se of PR/GA thod f NRM s h → T in g f t ne nd h in PR/GA approach s for NRM ch → M nit g and e l t by p t g g ra gem nts f r ll bo ti e NRM d s k g nd pl tat	→ l t y d s t t thod f nt p t t d t fy nd ncl d d ff t NRM h → D l p t d t t g f w thod f l d g d ff t type f NRM l nd d t k g → A t t tl and be f ts f l d g d ff t types f t t h logy d l pm t n NRM → A t f the co t nd be t f l g p rt l h po ru l w tl ia g nal g p pa p t ry NRM

[1] PR/GA fer t th f g id r naly t ident fy type f by g nd r w lth id the a i ble nd p t p t ry tl od l s f d ff t type t

[2] Th l f NRM (a) t ld id f l l (b) nity nd © bey d m nity f a pl w t h d iag t

Figure 5

Systemwide Program on Participatory Research and Gender Analysis for Technology Development
Work Breakdown Structure for Gender Analysis Working Group



Workplan, 1996

Completed

TAC approved a Systemwide Initiative in March 1996

The first Systemwide Seminar was convened September 1996 to define expected outputs of the initiative and define the institutional and organizational procedures for CGIAR NARIs and NGO collaboration A first meeting of the three global working groups was held (participatory approaches in plant breeding and natural resource management and the gender analysis groups) Key methodological and organizational challenges have been defined specific activities have been proposed and elements of a comparative framework have been suggested

The Planning Group (duration of one year) was formed in September 1996 with eight elected members linked by e mail

The proposal for the systemwide initiative was finalized and submitted to donors The proposal incorporates recommendations of the systemwide Planning Meeting

The proposal is being submitted to TAC for consideration

Workplan, 1997

Planning Group finalizes guidelines for project submission and formally solicits and endorses projects which fit within the workplan Coordinator is recruited CIAT appoints a core funded senior staff members as coordinator

Activities in the first year will begin with the activities listed under the first output planned by each working group in Figure 3 4 and 5

Expected Impact

Impact in CGIAR System NARIs NGOs and GRO s

This systemwide effort will provide widely applicable guidelines for the use of participatory R&D approaches to technology design in both preadaptive adaptive and adaptive research based on rigorous empirical assessment of its potential in two fields which are central to the agenda of the IARCs NARIs and NGOs Strategy for main streaming use of these methods in the CGIAR and beyond can be clearly defined and given significant momentum by this work Achieving the participation of users especially women in the process of technology

development will enhance the capacity of the CGIAR and NARIs to work effectively with other types of institutions to benefit the poor

Box 11 Participatory Plant Breeding and Varietal Evaluation projects which will benefit from system wide methodology development

	Site / Regions				Institutions	
Species	Africa	Asia	LAC	Selection	IARCs	NARS
Barley	✓			Lines seg pop	ICARDA	NARIs
Beans/maize	✓		✓	Lines/composite	CIAT/CIMMYT	EMBRAPA
Cassava	✓		✓	Seg pop	CIAT/IITA	EMBRAPA/CBN
Forages		✓		Accessions	CIAT/IRRI	NARIs
Maize		✓		Composite		NGOs
Pearl Millet		✓		Population	ICRISAT	
Potato			✓	Clones	CIP	CONDESAN
Rice		✓		Lines	IRRI	NARI NGOs
Various	✓	✓	✓	Landraces		Community based NGO s CGN Wageningen

Incorporation of participatory methods and gender analysis into ongoing projects of the collaborating Centers NARIs and NGOs will provide concrete demonstration of the pay off to applying these methods as well as a critical mass of people experienced in their use This is vital to achieving progress in consolidating scientific credibility for gender analysis and user participation which goes beyond rhetoric about their importance

Empirical assessment of methods for preadaptive adaptive participatory plant breeding will help to guide breeders choice of the most appropriate breeding approaches for different circumstances by clarifying the relative advantages of conventional participatory and indigenous crop breeding strategies Pooling resources among different institutions in a systemwide effort will greatly accelerate this methodology development

Clear guidelines for decentralizing research using participatory approaches with current institutional arrangements or new partnerships will improve the cost effectiveness of research and enhance its impact Further explicit attention to local organizational arrangements within NRM specifically will open up possibilities not yet sufficiently explored for supporting durable farmer based resource management systems

By situating this work in a framework for comparative analysis of methodological and organizational issues which are common to other fields of research where use of participatory methods and gender analysis is less developed the proposed program will maximize spill over from one field to another promoting economies of scale in methodology development The proposed program of work can be expected therefore to accelerate the process of learning about how to use participatory approaches and gender analysis effectively in preadaptive adaptive plant breeding and NRM research

Expected impact for men and women farmers

Gender analysis gives visibility to the forgotten farmers the rural women in developing countries who use and conserve germplasm and manage natural resources Preadaptive adaptive and adaptive participatory approaches give them a voice in the definition and prioritization of research problems and in the design of technologies to meet their needs Bringing gender analysis and participatory methods into the mainstream of public sector research will scale up the visibility of women as users of technology and allow their voices to be heard This is vital to achieving impact which benefits poor people both poor women and the families whose livelihood depends upon them

Participatory methods and gender analysis also have the potential to strengthen indigenous systems of knowledge generation of crop development and of natural resource conservation Strengthening these systems as opposed to displacing or discrediting them is often vital to a process of technology development which promotes sustainable production increases and natural resource conservation

Box 12 Impact of gender analysis of proposed systemwide program

Visibility and credibility of gender analysis reinforced by identification of its payoff to upstream research activities of the CGIAR

Dissemination accelerated by formation of a critical mass of people from different disciplines experienced in the use of gender analysis for technology development

Use by NARIs catalyzed through joint projects and empirical evidence of impact on core plant breeding and NRM research programs

Program evaluation

Progress in methodology development and organizational innovation will be assessed annually by Program s Planning Group through independent consultants Working Group technical reports and papers on comparative analysis presented in the Systemwide Seminars Indicators of progress and impact have been identified by the PB NRM and Gender Analysis Global Working Groups (Tables 1 2 and 3) Partner institutions will involve IARCs NARIs NGOs farmers and other stakeholder groups in project level monitoring and evaluation

Program evaluation of the entire initiative will be scheduled near the mid term point (about 2 years) and at the completion of the Initiative (5 year point) Representatives from all major partner groups will be invited to participate (CGIAR NARIs NGOs Donors and other stakeholders) Community evaluations of the program at each project site will be synthesized and integrated into the central evaluation findings

Program Evaluation

Table 1 Outputs and Indicators of Participatory Plant Breeding Working Group

	OUTPUTS	INDICATORS
1	Assessment and development of effective participatory methods in plant breeding with focus on 3 types farmer s breeding plant selection (segregating lines) variety selection (fixed lines)	1 1 Methodology guidelines published for all three approaches 1 2 Methods in use in at least four cases involving National programs and NGOs (at least one case) for each type 1 3 Publications disseminated on the field level results of the use of such methods 1 4 Workshops to exchange results conducted
2	Beneficiary groups more accurately involved & targeted in participatory breeding through methods development for involving direct & indirect stakeholders	2 1 Published guidelines on the cost benefits of different approaches to involving and targeting differentiated users 2 2 Synthesized findings on how to involve hidden and indirect stakeholders and how to resolve conflicts among diverse groups 2 3 Evidence available that PB products are more user differentiated 2 4 Evidence available that indirect stakeholders such as extension have been involved
3	Effective organizational forms for operationalizing participatory breeding identified and developed in the research process	3 1 Ways existing breeding programs organize and fund links with farmers reviewed and documented 3 2 Reports available on organizational options for participatory breeding along with cost benefit analyses of these 3 3 Guidelines for decision makers on promising organization forms 3 4 Capacity building through training and consultancies provided
4	User access to products of participatory breeding assured through identification of effective organizational forms and links to supporting seed services	4 1 Synthesis of case studies on how to strengthen local seed system 4 2 Published analysis on the role of the formal seed system in PB approaches 4 3 At least 2 channels identified which move PB products rapidly to different users

Program Evaluation

Table 2 Outputs and Indicators of NRM Working Group

OUTPUTS	INDICATORS
1 Synth s s of the state of th rt pply ng PR/GA pp oaches n NRM ch mpl t d	1 1 In ntory nd ssment f l bl m thods fo PR/GA NRM rese r h ompleted and a labl s w k g p pe 1 2 Up to fo r regional w kshops held to c mpare r ntly used PR/GA methods 1 3 One global workshop held to d t fy th co stra ts nd gaps n PR/GA approa hes and t d f th f c s and d t mine p orit es fo t phase of resea ch 1 4 P ed gs of wo k hops publ shed and d ssem nated
2 Impro d p nd natural rc manag ment str t g es ncorpo at ng bett r use of existing and new PR/GA methods de eloped nd d s minated	2 1 Workshops cond t d at up to 6 research s t s to corporat gender analys s and g nder s nsiti e parti p tory m thods into project a ti t s 2 2 G d lines prepared on m thods for scaling up of NRM options nd participatory NRM methods 2 3 Up to t n xperiments on how res rc user and es arch r perim tation fit together cond t d nd luated 2 4 Up to three community b sed and 3 researcher based resource monitoring tools tested compared and results ready for dissemination 2 5 Up to four regional workshops for practitioners to compare PR/GA methods nd strategies held 2 6 G delines for PR/GA methods and o ganizational strategies published
3 Organizational p c ty to use PR/GA methods in NRM research mp o d w th a focus on farmers local nst tut ons d dual sc entists and e te s n w kers nd search and e tens on nstitutions	3 1 Res rch results and guidelines comparing new options for organizational nno at on fo d fferent types of te hnologies and different management scales are publ sh d 3 2 Thr e case studies of o ganizatio al cha g f mp o g the ffecti e participation of d fferent stake holders ar compl ted nd synth s zed 3 3 N w local tworks for collecti e resource monitoring and actio re f rm d 3 4 Farmer representation in research decision-making fora ncreas d 3 5 Tra ning f tra ners and research partners conducted for new NRM esearch partnersh ps
4 Effe ti e methods for n ol ng gender d fferentiated and other d rect and indirect stakeholders in NRM de eloped	4 1 A comparison of th costs nd ben f ts to technology des gn and adoption of different le els of partic patio and th lus f d fferent types of s rs cross types of NRM and scales of managem nt is compiled and publ sh d as a work g paper 4 2 G del nes fo the ol m nt f d fferent users n d ffer nt types f NRM nd scales of m nagement p bl hed

Program Evaluation

Table 3 Gender Working Group Outputs and Indicators

OUTPUTS	INDICATORS
1 Effective methods and capacity developed for using gender analysis and involving direct and indirect stakeholders in PB and NRM	1 1 Guidelines are published on the use of gender analysis and the effective inclusion of different types of users in PB and NRM technology development 1 2 Gender analysis and guidelines for inclusion of different types of users are included in published PB and NRM participatory guidelines 1 3 A synthesis and case studies on the effectiveness of gender analysis and methods for including different users across technology development in PB and NRM is published
2 The costs and benefits of including PB and NRM assessed	2 1 A comparison of cost benefit ratios for adoption of PB and NRM technologies by including different types of users completed and disseminated 2 2 A comparison of cost benefit ratios for targeting particular types of users for PB or NRM technologies are completed and disseminated 2 3 Guidelines on the costs and benefits of including gender analysis and different types of users in participatory PB and NRM technology development are included in the published PB and NRM guidelines

Table 4 **Proposed Budget (in US $)**

Sy temwide Program on Particıpatory Research and Gender Analysis for Technology Development and Institutional Innovation

L Item	Y ar 1	Y r 2	Y ar 3	Y r 4	Y ar 5	Total
1 Methods nd organ tion. l links for particıpatory plant breeding						
C mm t o s	500	1 000	1 000	1 000	1 000	4 500
W kshops	5 000	26 000	27 000	28 000	29 000	135 000
Emp l stud es 1) CG	275 000	303 500	315 500	327 500	340 000	1 561 500
2) Oth I t tut o s	275 000	303 500	315 500	327 500	340 000	1 561 500
Comm ty fu ds	40 000	83 000	87 000	90 000	94 000	394 000
Publ c tions	0	0	15 000	0	5 000	40 000
Co sulta ts	25 000	5 000	25 000	25 000	25 000	1 5 000
T t l 1	**640 00**	**742 000**	**786 000**	**799 000**	**854 000**	**3 821 500**
M th ds d g nizat l l nk ges for part c p tory NRM						
C mm ni t ns	500	5 000	5 000	6 000	6 000	22 500
Wo kshops	83 000	26 000	27 000	28 000	29 000	135 000
Empirical studies 1) CG	0	03 500	315 500	327 500	340 000	1 286 500
2) Other Institutions	0	303 500	315 500	327 500	340 000	1 286 500
Comm nity funds	0	83 000	87 000	90 000	96 000	356 000
Publications	0	0	15 000	0	25 000	40 000
Consulta ts	50 000	50 000	50 000	50 000	50 000	250 000
Total 2	**133 500**	**746 000**	**790 000**	**804 000**	**861 000**	**3 334 500**
3 Gender analysis for partic p tory research						
Communications	500	500	500	500	500	2 500
CG G nd Analys Program	100 000	100 000	100 000	100 000	100 000	500 000
Support to othe nst tutions Emp ri l stud s tra nıng and d ssemınation	30 000	50 000	57 000	58 000	58 000	253 000
T tal 3	**130 500**	**150 500**	**157 500**	**158 500**	**158 500**	**755 500**
4 C pacity building						
Systemwide seminars	0	54 000	0	54 000	58 000	166 000
Public tions	0	0	0	0	35 000	35 000
Short c s	40 000	60 000	0	0	0	100 000
F ll w p tra ni g	0	0	36 000	36 000	0	72 000
Tra er s wo kshops	0	0	36 000	0	36 000	72 000
T tal 4	**40 000**	**114 000**	**72 000**	**90 000**	**129 000**	**445 000**
5 P oj t Coord nat on	45 000	45 000	45 000	45 000	45 000	225 000
C mm nicati	500	500	500	500	500	2500
T tal 5	**45 500**	**45 500**	**45 500**	**45 500**	**45 500**	**227 500**
G and Total	**990 000**	**1 798 000**	**1 851 000**	**1 897 000**	**2 048 000**	**8 584 000**

Budget Notes

The grant request has been approved by TAC for US $0 9 million for 1997 pending final TAC approval of the initiative as a systemwide program which will be requested in November 1996

1 Resource allocation procedures

The Planning Group has been mandated by the participants in the SWI Planning Meeting held in September 1996 to finalize guidelines for the inclusion of projects in executing the workplan and to work on funding the Program It is envisaged that once the funding available for 1997 is designated by donors the Planning Group will solicit proposals from ongoing projects such as those in Annex 2 with respect to how these projects would link up with the SW Program The Planning Group will allocate resources for 1997 to those projects which best contribute to the overall workplan using criteria developed by the Planning Meeting participants

The Planning Group expects to allocate funds received by the Systemwide program to ongoing projects or research programs which demonstrate capacity to cofinance activities in the Program s workplan rather than to initiate new projects

A portion of the funds donated to the program will be used to support and encourage partnerships among different types of orgnaizations for the implementation of the workplan Therefore the line item for empirical studies specifies amounts for CG and other institutions

Projects receiving support from the Program will be members of the Working Groups together with other interested practitioners who have joined the Program through the first International Seminar or who may wish to do so in the future

Partner institutions will also seek funding for projects with the endorsement of the Systemwide Program in addition to donations made through the Participatory Research and Gender column of the CGIAR matrix Such additional grants made to partners will contribute to the implementation of the proposed workplan but will be administered by the recipient institutions

2 Working groups on PPB and NRM research

a Funding is requested for tow international working groups to carry out the workplan in Figures 3 and 4 for the assessment and development of participatory approaches and gender analysis in PB and NRM research

b Funds are to support email networking among participants in the working groups and workshops which will be organized regionally for the exchange of methodology to

support the implementation of the empirical studies

c Funds for empirical studies are for research activities in the workplan

d Community funds are to provide rotating funds for farmers and GROs to conduct and continue participatory research activities when appropriate after the termination of this Program and its constituent projects These funds will also assist farmers and community participating in Program evaluation and in planning meetings

3 Gender Analysis

a Funds are requested to support the involvement of the CG Gender Analysis program s research activities in the systemwide program including consulting technical advice and networking on research related issues with IARCs

b Additional funds provided for the Gender Working Group will add to the CG Gender Analysis Program s IARC network the participation of non CG institutions with expertise in the area Gender Working Group members will also be members of the Plant Breeding and NRM Working Groups Funds are requested to enable the Gender Working group network by email and to support non CG institutions in contributions to the workplan that are uniquely related to strengthening the integration of gender analysis into the overall workplan

4 Capacity Building

a Funds are requested for bi annual systemwide seminars at which the working groups will present to each other and to a wide audience of interested practitioners in the field results of work in progress

b Funds will be used to add support to training events of the working group members so that these can include modules on participatory research and gender analysis Using the same strategy the program will conduct follow up training and training for trainers for the same purpose after two years to consolidate capacity built this way

c Publications by the Program will be papers from the systemwide seminars Commercial publication will be sought for the write up of the guidelines and case studies based on the empirical research conducted by the working groups

References

Ashby Jacqueline A J A Beltran M P Guerrero and H F Ramos Improving the Acceptability to Farmers of oil Conservation Practices Soil and Water Conservation Society Forthcoming

Ashby Jacqueline A and Louise Sperling 1995 Institutionalizing participatory client driven research and technology development in agriculture Development and change Vol 26 No 4 October 1995 753 770

Ceccarelli S S Granco and J A G Van Leur 1995 Understanding landraces The fertile crescent s barley provides lesson to plant breeders Diversity In Press

CIAT CIMMYT IRRI ICARDA 1996 Systemwide Program on participatory Research and Gender Analysis for Technology Development A proposal for the Technical Advisory Committee (TAC)

CIAT 1994 1995 Hillsides Program Annual Report CIAT Palmira Colombia

Fernandez M 1995

Greenland et al 1994

Hardon Jaap 1995 Plant breeders and Farmers can the twain meet? Paper presented at PB workshop Wageningen Holland

Iglesias Carlos and Luis Alfredo Hernandez 1994 Participatory Cassava Breeding Cassava Program Annual Report CIAT Palmira

IPGRI 1995 Participatory Plant Breeding Issues in Genetic Resources No 3 October 1995

Kornegay Julia Jorge Alonso Beltran and Jacqueline A Ashby 1995 Farmer Selections within Segregating Populations of Common Bean in Colombia Paper presented at PPB Worksop Wageningen Holland

Okali C C V Sumberg and J Farrington 1994 Battlefields and trial plots Rhetoric and reality of Farmer Participatory Research Intermediate Technology Publications London

Pretty J N and P Shah 1994 Soil and water conservation in the 20th century A history of coersion and control Rural History Centre Research Series No 1 (Reading MA University of Reading England

Soil Water and Nutrient Management Initiative Report from the Feldafing Consultation (1995) DSE/IBSRAM/CIAT 1995

Sarin Madhu 1996 Actions of the voiceless the challenge of addressing subterranean conflicts related to marginalized groups and women in community forestry Paper prepared for the FAO Email conference on Addressing Natural Resource Conflicts through Community Forestry

Sperling Louise and Urs Scheidegger 1995 Participatory Selection of Beans in Rwanda Results Methods and Institutional Issues IIED Gatekeeper Series No 51

TAC 1995 Priorities and Strategies for Soil and Water Aspects of Natural Resources Management Research in the CGIAR CGIAR Secretariat Washington D C October 30 November 3 1995

Thrupp Lori Ann 1995 Personal Communication comments on this proposal

Welzein R Eva M L Whitaker and M M Anders 1995 Farmer Participation in Pearl Millet Breeding for Marginal Environments Paper presented at PPB Workshop Wageningen Holland

Zimmermann Maria J de O 1995 Breeding for Marginal/Drought Prone Areas in Northeastern Brazil Paper presented at PPB Workshop Wageningen Holland

Annex 1

International Seminar on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation
CIMMYT IRRI CIAT
CIAT Cali Colombia 9 14 September 1996

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Annex 2

Examples of Projects with which the Proposed Program will Work

The following summaries of ongoing projects involving the cosponsoring IARCs and their institutional partners are examples of the type of projects with which the proposed program will collaborate This collaboration requires additional support provided through the program to add capacity to the relevant partners in each ongoing project to carry out the workplan developed at the SWI Planning Meeting September 9 14 1996

Project Overviews

1 Introduction and conservation of improved genetic diversity in farmers' fields

Institutional Partners CIAT Colombian Institute for Agricultural Research (CORPOICA) Instituto Nacional de Investigacion Agraria (INIA) Peru the Asociación para el Desarrollo Rural de Cajamarca (ASPADERUC) a Peruvian NGO the PROFIZA network of national bean breeders in the Andean region CONDESAN a consortium of Andean research and development institutions which includes CIAT and CIP

Overview Collaboration with the systemwide initiative will aid these breeding programs in their search for a strategy which will combine science based and farmer based genetic improvement at a regional or agroecosystem level in a model that can be adapted to other regions and other crops

Two types of crops will be involved vegetatively propagated cassava and self pollinated common beans Presently ongoing studies of farmers varietal selection criteria will be expanded to better understand how farmers use maintain and discard genetic diversity Gender analysis will be a tool in determining the appropriate types of farmers to involve in the evaluation collection and selection for different traits Data will be integrated with GIS analysis to understand the spatial distribution of local genetic diversity types of users and their preference structures

Strategies will be tested for bringing a broad range of germplasm in the early stages of the breeding process to farmers fields and involving farmers in their selection Germplasm will be drawn from segregating progenies from the recombination of elite materials from CIAT s extensive collections as well as local landraces At the same time these progenies will be evaluated within the normal breeding programs of the participating national and international partners

The viability of alternative approaches to *in situ* conservation with farmer participation will be assessed involving for example farmer managed nurseries or conservation through breeding

with valued landraces Research will compare differences in the selective pressures that farmers and professional breeders working alone and working together exert on the local genetic resources in these two crops to characterize the advantages and disadvantages of different approaches to participatory breeding and in situ conservation

It is hypothesized that a broader range of genotypes will be selected within a given ecosystem with farmer involvement creating a mosaic of genetic diversity at the field farm and community level Effects of conventional and different strategies for farmer participation on genetic diversity will be monitored as wells as the relationship of the resultant genetic diversity on yields quality traits and the incidence of abiotic and biotic constraints to production

The field work on cassava for this study will be initiated by CIAT and CORPOICA in the north coast of Colombia and is expected to have an important methodological spin off within a short time for related breeding work linked to the semi arid regions of Africa in a collaborative project with EMBRAPA Brazil and IITA The field work on beans will be carried out in Cajamarca Peru a center of diversity of common beans

Duration Five years

Total value of the project US $1 600 000 of which 50% is contributed by existing core of the partner institutions

2 Maize diversity and conservation and utilization A farmer scientist collaborative approach

Institutional Partners CIMMYT (executing agency) Mexican National Institute for Research on Forestry Agriculture and Livestock (INIFAP) Mexican National Agricultural College (Chapingo) and Post graduate School (Montecillos) NGOs involved in biodiversity conservation and agricultural/rural development in Mexico ejido and farmer s groups collaboration with the McKnight Foundation funded project in the state of Puebla Mexico

Overview Participation in the proposed systemwide program will enable the collaborating research program to develop and evaluate alternative methods for farmer involvement in improving maize landraces *in situ* and the conservation of diversity in maize in *ex situ* banks which should be useful to farmers and maize breeders worldwide The project involves innovative methodology development to merge farmers knowledge of the strengths and weaknesses of locally grown folk varieties with professional breeder s knowledge of global germplasm resources to improve the usefulness of folk varieties and thus the conservation of valued traits Cultivars collected with farmer involvement as well as new ones resulting from participatory breeding will be preserved at CIMMYT and other Mexican genebanks Gender analysis will be an essential tool for establishing the value of different traits and genetic material for impact assessment and for determining what types of farmers should participate

in different aspects of the work collection evaluation breeding monitoring and dissemination A review and comparative analysis of selected techniques for participatory breeding and monitoring of genetic diversity will be carried out together with the development of a strategy to disseminate these techniques to different types of users The development of methodology for evaluating the impact of the farmer scientist collaborative approach will be integral to the research The field work for this project will be located in four sites in Mexico the center of origin of maize and which today contains more maize diversity that any other part of the world with 80% of its maize area planted to local landraces

Duration Six years

Total value of the project US $4 million

3 Farmers and Breeders Building a partnership for rainfed rice

Institutional Partners IRRI the Indian Council for Agricultural Research (ICAR) the International Rainfed Lowland and Upland Rice Research Consortia

Overview Involvement with the proposed systemwide program will enable this project to test and evaluate a number of alternative strategies for bringing farmers into the generation of improved rice varieties for more than 50 million hectares of rainfed environments Farmers will be provided with diverse plant populations for evaluation and selection with respect to adaptation to stresses and increased productivity in contrasting subecosystems These gene pools will include segregating populations dihaploid lines advanced breeding lines and composite populations

Methodology development will include the examination of the results of farmer involvement in the selection of these different sources of genetic materials and the advantages and disadvantages of alternative approaches to harnessing the complementary skills of farmers and breeders through farmer participation in this selection process It will also involve attention to traits selected or easily detected by farmers It is in these cases that the tools of biotechnology such as tagged genes and molecular markers may be applied in the farmers fields during the selection process Particular attention will be given to developing applications of biotechnology which farmers can understand and use for selection and varietal deployment

The project also involves the widespread dissemination and implementation of the most efficacious strategies identified in partnership with NARIs NGOs Universities and farmers organizations in eastern India northeastern Thailand and the southern Philippines

Duration Three years

Total value of the project

4 Participatory natural resource management research in the drylands The case of Southern Tunisia

Institutional Partners ICARDA Syria in collaboration with the Insitut des Regions Arides (IRA) under the umbrella of the Dryland Resource Management Project (DRMP)

Overview There is a growing concern among the developing Mediterranean countries on the degradation of natural resources (soil water and natural vegetation) and its potential impact on the sustainability of agricultural development As a result of rapid population growth and higher income levels food demand continues to rise thus exerting a mounting pressure on the limited land and water resources Traditional resource management systems where communities played a vital role are weakening or disappearing due to social changes Traditional conservation practices such as terraces are being neglected and abandoned thus causing accelerated soil erosion and siltation in dams Expansion of cultivation into the marginal lands which were traditionally reserved for grazing is increasing soil erosion by wind and water Other environmental impacts of land degradation include the loss of natural bio-diversity which affects future crop improvement

Policy makers in Tunisia as in many countries in the region are concerned about the effects of natural resource degradation on rural poverty and associated social problems There is a direct linkage between resource degradation and poverty Also the impact of water shortage on the country s future development is of particular concern to Tunisian policy makers Hence they are very keen to enhance the conservation and efficient utilization of water resources in any way possible

The institutional partners have initiated an inter-disciplinary and participatory resource management research under the umbrella of Dryland Resource Mangement Project (DRMP) While the participatory approach is necessary to ensure that the perspectives and views of individual land users who will ultimately make the resource management decisions are heard and their solutions incorporated into the research process Users participation will enable researchers to understand why observed actions are being taken and assist in identifying the causes of degradation

The approach emphasizes a watershed perspective where groups of farmers using a micro watershed are identified and collective group action on practices for overall improvement as well as individually selected practices are identified and evaluated The step by step approach of the participatory methodology used to elicit farmers perspectives understand their problems and allow their selection of solutions will be clearly documented The significance and contribution of the participatory methods to the success of the research process will be demonstrated The applied participatory approach involves the collaboration of different partners including farmers researchers development agencies NGOs farmer organizations community leaders and policy makers at different levels

PUBLICATIONS

LISTADO ACTUALIZADO DE PUBLICACIONES IPRA DEL CIAT

Noviembre de 1996

PUBLICACIONES

UNIDADES INSTRUCCIONALES / INSTRUCTIONAL UNITS

Ashby J A 1990 Evaluating Technology with Farmers A Handbook CIAT Colombia

Quiros Carlos A Gracia Teresa and Ashby Jacqueline 1991 Farmer Evaluations of Technology Methodology for Open ended Evaluation Instructional Unit No 1 CIAT Colombia

Ashby Jacqueline 1992 Evaluer des technologies avec les paysants Un manuel CIAT Colombia

Ashby Jacqueline 1993 Manual para la evaluacion de tecnologia con productores CIAT Colombia

Quiros Carlos A Gracia Teresa Ashby J A 1993 Evaluaciones de Tecnologia con Productores Metodologia para la Evaluacion Abierta Unidad Instruccional No 1 CIAT Colombia

Ashby J A 1994 Manual para a Avaliaçao de Tecnologia com produtores CIAT Colombia

Guerrero M P Ashby J A y Gracia, T 1996 Evaluacion de Tecnologia con Productores Ordenamiento de Preferencias Unidad Instruccional No 2 CIAT Colombia

Guerrero M P Ashby J A Gracia T 1996 Farmer evaluations of Technology Preference Ranking Instructional Unit no 2 CIAT Colombia

Guerrero M P Ashby J A y Gracia, T 1996 Avaliaçao de Tecnologia com agricultores Classificaçao de Preferencias Unidade de Instrução No 2 CIAT Colombia

CARTILLAS / HANDBOOKS

IPRA CIAT 1993 El Ensayo Cartilla No 1

IPRA CIAT 1993 Los Comites de Investigacion Agricola Local CIAL Cartilla No 2

IPRA CIAT 1993 El Diagnostico Cartilla No 3

IPRA CIAT 1993 El Objetivo del Ensayo Cartilla No 4

IPRA CIAT 1993 La Planeacion del Ensayo Cartilla No 5

IPRA CIAT 1993 La Evaluacion del Ensayo Cartilla No 6

IPRA CIAT 1993 Cosas que pueden pasar Cartilla No 7

IPRA CIAT 1993 Compartimos los Resultados de nuestro Ensayo Cartilla No 8

IPRA CIAT 1993 Un Caso Real Cartilla No 9

IPRA CIAT 1993 EL Diario del Ensayo

IPRA CIAT 1996 Las Experiencias tambien cuentan Cartilla No 10

IPRA CIAT The Trial Handbook No 1 (forthcoming)

IPRA CIAT The Local Agricultural Research Committees Handbook 2 (forthcoming)

IPRA CIAT The Diagnosis Handbook 3 (forthcoming)

IPRA CIAT Planning the Trial Handbook 4 (forthcoming)

IPRA CIAT Designing the Trial Handbook 5 (forthcoming)

IPRA CIAT Evaluating the Trial Handbook 6 (forthcoming)

IPRA CIAT Things that can Happen Handbook 7 (forthcoming)

IPRA CIAT Feedback to the Community Handbook 8 (forthcoming)

IPRA CIAT Actual Cases Handbook 9 (forthcoming)

IPRA CIAT Trial Record Book (forthcoming)

IPRA CIAT 1996 Las Cuentas Claras Cartilla 11

IPRA CIAT 1996 Es Bueno Saber a Tiempo si Vamos Bien Cartilla 12

IPRA CIAT 1996 Guias para Conocer Nuestro Camino Cartilla 13

IPRA CIAT Experiences Also Count Handbook 10 (forthcoming)

IPRA CIAT Clear Accounts Handbook 11 (forthcoming)

IPRA CIAT It s Good to Know in Time how We are Doing Handbook 12 (forthcoming)

IPRA CIAT Guidelines to Help us Along the Way Handbook 13 (forthcoming)

JOURNAL ARTICLES AND BOOK CHAPTERS

Ashby J A 1986 Methodology for the Participation of Small Farmers in the Design of On Farm Trials Agricultural Administration 22 Elsevier Applied Science Publishers Ltd England

Ashby J A 1987 The Effects of Different Types of Farmer Participation on the Management of On farm Trials Agricultural administration & Extension 25 Elsevier Applied Science Publishers Ltd England

Ashby J A Gracia T Guerrero M P Quiros C A Roa J I Beltran J A 1995 Institutionalising farmer Participation in Adaptive Technology testing with the CIAL ODI Network paper 57

Ashby J A Gracia T Guerrero M P Quiros C A Roa J I Beltran J A 1995 Organizacion de Agricultores Investigadores para su Participacion en la Investigacion Agricola y en el Desarrollo de Tecnologias IPRA CIAT (translation)

Ashby J A and Sperling L Institutionalizing Participatory Client Driven Research and Technology Development in Agriculture *Development and Change* Vol 26 (1995) 753 770 Institute of Social Studies 1995 Oxford United Kingdom

Ashby J A Beltran J A Guerrero M P and Ramos H F 1996 Improving the Acceptability to Farmers of soil Conservation Practices Journal of Soil and Water Conservation July August 1996 Volume 51 Number 4

Jacobsen V Ashby J A and Scobie G M Rules and Resources Institutional Change for Natural Resource Management SER Consulting Hamilton New Zealand University of Waikato Hamilton Zealand Centro Internacional de Agricultural Tropical CIAT Cali Colombia 1996

Quiros C A Gracia T and Ashby J A 1995 Avaliaçao de Tecnologia com Produtores A Avaliaçao Aberta Unidade de Instruçao No 1

Roa J I Ashby J A Gracia T Guerrero M P y Quiros C A Investigacion Participativa en la Produccion de Semilla Mejorada por Pequenos Agricultores El Caso de ASORTOP Pescador Cauca Colombia Taller Centroamericano sobre desarrollo de Sistemas de Pequenas Empresas de Semillas PES Guatemala, Abril 21 26 de 1991

Van Herpen D and Ashby J A Editors Gender analysis in Agricultural Research CIAT Workshop June 13 14 1991

Van Herpen D and Ashby J A Editors 1991 Analisis de Genero en la Agricultura CIAT Palmira Colombia 13 14 de Junio 1991