

## **Megaproject 5: Poverty and Livelihood Analysis and Impact Assessment in Dry Areas**

### **Rationale**

In the dry areas poverty in all its dimensions – economic, nutritional and natural resource – is widespread. In the CWANA region it is estimated that 70% of the poor are found in rural areas even though only some 43% of the total population lives there. The rural population is largely dependent on agriculture, which is facing a number of converging environmental trends that reduce options, drive migration and threaten the future sustainability of livelihoods, particularly in the most marginalized areas (e.g., mountains and desert margins). A deeper understanding of the determinants of this poverty, and of the livelihood strategies adopted by rural communities, is necessary to continually refine the targeting of ICARDA’s research, enhance its impact, and identify pathways out of poverty.

Despite modest growth in some parameters in the CWANA region (e.g., in national GDP and cereal production during the last five decades), recent data show that poverty is increasing. Poverty-targeted research programs and policies are needed to achieve sustainable reductions in poverty. The Millennium Development Goals (MDGs), including the objective of reducing poverty by half by 2015, provide the global framework for ICARDA’s research strategy. Poverty, in its broadest sense (income poverty, water poverty, educational opportunity, gender equity, and vulnerability) are significant issues in the CWANA region, in particular, and dry areas in general. While poverty is a real problem in CWANA, a significant portion of the population is vulnerable to lapsing into poverty, given the region’s volatility and variable climatic conditions that have an impact on agricultural outputs and the livelihoods of the rural communities. Countries experiencing natural and man-made disasters (drought, conflict), or in transition (e.g., Central Asia and the Caucasus), have experienced dramatic increases in poverty rates over relatively short periods of time.

The very poor tend to be associated with marginal production environments in rural areas. New technologies, policies and institutional options compatible with these marginal and risky environments of CWANA region are challenging to develop, and constitute an evident priority for ICARDA. Identifying small farmers’ constraints to technology adoption and use continues to be a priority issue.

Megaproject 5 responds to the CGIAR research priorities developed by the Science Council, especially Priority 5 on “improving policies and facilitating institutional innovation to support sustainable reduction on poverty and hunger” and elements of other priority areas. More specifically, the project will assess the socio-economic trends, drivers and risks affecting the livelihoods of rural communities, better understand and characterize the poor through compilation and generation of information related to location and depth of poverty, livelihood strategies, and the role of assets in well-being and evaluation of options for improving access to assets.

### **Target Eco-regions**

The project addresses non-tropical dry areas with a geographic focus on the CWANA region and Nile Valley countries. As a cross-cutting project, it informs complements and supports the work in the target eco-regions of ICARDA’s other projects.

### **Project Description**

The project goal, purpose, outputs, output targets and associated expected outcomes and impacts are provided in the attached “Project Impact Pathway” matrix. Assumptions and external conditions associated with outputs, outcomes and impacts are listed in the introduction to the project portfolio.

In its current research portfolio, ICARDA gives stronger emphasis to enhancing its capacity to reach the poor by obtaining a deeper understanding of the nature, causes, intensity, and effects of poverty at the community and household levels, and by promoting technical, institutional and policy options that can respond to their needs. Similarly, efforts are directed toward the involvement and active participation of end-users in research development, testing and verification so that relevance and adoption by individuals, communities and institutions is maximized. Frameworks and methodologies for

participatory and community-based research are also being developed and implemented in partnership with NARS to enhance the impact on rural livelihoods.

Using detailed analyses of the organization of households and communities, employing a sustainable livelihoods approach, assessing the adoption and impact of research outputs, and the valuation of the natural resources on which they depend, MP5 supports the entire ICARDA research agenda by providing the knowledge and feedback needed to clarify technical, institutional and policy options that support the development of sustainable livelihoods. The project will pay specific attention to the gender dimension of poverty and the structures and constraints that determine differential access to resources and income earning opportunities. In addition, work will focus on the analysis of production systems and markets in order to improve livelihoods and enhance market opportunities for rural communities.

Major elements of this poverty-targeting project comprise:

- Analysis of the determinants of poverty, vulnerability and rural livelihood strategies, with specific attention to the gender dimension of poverty. This involves identification of indicators of various dimensions of rural poverty, determination of livelihood strategies, and possible pathways out of poverty. It also includes understanding small farmers' constraints to markets through assessment of problems of market access, potential for community or collective marketing, and institutional and policy support for improving market access.
- Assessments of the impact of agricultural research and identification of pathways-out-of-poverty. This includes development of frameworks and methodologies for assessing adoption and impact (ex-post and ex-ante), documentation of adoption indicators and identification of factors affecting the adoption and constraints to adoption, and quantifications of the impacts of technological, institutional and policy options and their implications on research.
- Market and non-market valuation of the natural resources used by rural communities and analysis of the impact of NRM research on rural livelihoods and environmental sustainability. In addition to the assessment of the role of natural resource endowments as a determinant of rural poverty, identification of factors affecting the adoption of natural resource management options and their economic, institutional and environmental impacts.
- Analysis of policy and institutional options and the returns to investments in the dry areas.
- Institutional strengthening and capacity building. This involves better understanding of the evolution of agricultural and resource-use policies, their outcomes and consequences, and their effectiveness in enhancing the uptake and adoption of improved technologies, increasing household income, and improving food security.

### **Users and Beneficiaries**

Immediate users of the methodologies/approaches in poverty and livelihood analysis, natural resource valuation and impact assessment developed by the project are ICARDA researchers and NARS, national planners and decision-makers. The international aid community and development agencies can benefit directly from the estimates of returns to research investment in the dry areas to better target poverty reduction.

Because of the problem-solving participatory research approach employed, the immediate beneficiaries are the resource users involved in the case studies. The approaches and methodologies developed in these studies will be disseminated for use by NARS and other partners.

Both ICARDA and NARS researchers will benefit from the feedback provided by the project, through better targeting of their research and greater awareness of the problems and constraints faced by farm households. Farmers will, in turn, benefit from the development of appropriate technologies and solutions to production problems that take into account their needs and constraints. The information generated from the analysis of rural poverty and the micro-studies of farm households will ensure that technical solutions are developed in response to different needs of the rural poor.

Early identification of constraints that hinder the wide adoption of improved options (TIPOs) will help extension systems, research institutions, and development projects to work on their solutions. It will thus enhance technology dissemination to targeted communities. Information generated from valuation of the benefits of natural resource and environmental services, and the costs of resource degradation can be used by policy-makers to advice on investment options and natural resource management policies.

## **Collaborators**

### *National Programs*

- National research and extension programs in Central and West Asia, North Africa, sub-Saharan Africa (Eritrea, Ethiopia, Mauritania, Sudan), South Asia (Pakistan) and Latin America (Mexico and Brazil).
- University of Aleppo and Damascus University, Syria; University of Jordan; and Cukorova University, Turkey.

### *Advanced Research Institutes*

- ESCWA (UN Economic and Social Commission for West Asia)
- CIRAD (Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement), France.
- University of Hannover, Germany.
- Wageningen University, Netherlands.
- University of Berne, Switzerland.
- Imperial College, UK.
- University of Massachusetts, USA; Yale University, USA.
- United Nations University.

## **System Linkages**

- ICARDA and IFPRI share a joint appointment in property rights and collective action.
- ICARDA and ILRI are collaborating in livestock marketing.
- **Challenge Programs:** The project participates in the Challenge Program on Water and Food through a project on *Strengthening Livelihood Resilience in Upper Catchments of Dry Areas by Integrated Natural Resources Management*, in cooperation with CIAT.
- **Systemwide Programmes and other CG Consortia:** The project participates in:
  - Ecoregional Program for Central Asia and the Caucasus (*see separate narrative attached*).
  - Systemwide Program on Collective Action and Property Rights (CAPRI).
  - Systemwide Program on Participatory Research and Gender Analysis (PRGA)
  - CGIAR Consortium for Spatial Information.
  - Systemwide project on assessment of impacts of NRM research, convened by Standing Panel for Impact Assessment (SPIA).

## MTP 2006–2008: Project Impact Pathway

<b>Project</b>	<b>MP5: Poverty and Livelihood Analysis and Impact Assessment in Dry Areas</b>
<b>Goal</b>	Sustainable improvement of the welfare of poor people in dry areas
<b>Purpose</b>	More effective and better targeted research that contributes to development of sustainable livelihoods of rural communities in dry areas

	<b>Outputs</b>	<b>Intended Users</b>	<b>Outcomes</b>	<b>Impact</b>
<b>OUTPUT 1</b>	Causes of poverty and determinants of livelihood strategies in the dry areas are quantified, documented and accessible to stakeholders			
<b>Output Targets 2006</b>	Potential pathways out of poverty in integrated research site in Syria identified, documented and accessible to users	ICARDA research program, NARS, development agencies, policy-makers	Information integrated into ICARDA's research program for upscaling and outscaling; national research and extension programs promote identified options	Improved livelihoods of farm households within integrated research site
	The dynamics of poverty in integrated research sites in Iran and Kazakhstan analyzed ( <i>CP on Water and Food</i> )	NARS, ICARDA research program	Analysis is used by the ICARDA/NARS joint research program at each integrated site to better target research efforts	NARS capacity in livelihoods analysis enhanced
<b>Output Targets 2007</b>	GIS data bases and poverty mapping completed for selected areas in Syria	ICARDA research program, Syrian NARS and decision-makers	NARS and policy-makers design targeted interventions based on information	R&D better targeted to the poor
<b>Output Targets 2008</b>	Determinants of livelihood strategies within different agroecological and production systems in Syria, Morocco and Pakistan identified, documented and accessible to users	ICARDA research program, NARS, development projects, donors	Livelihoods approach mainstreamed into NARS research portfolio	Increase research effectiveness in improving rural livelihoods
	Potential livelihood options (pathways out of poverty) in selected sites in Iran, Syria, Uzbekistan identified ( <i>CP on Water and Food</i> )	NARS, development projects, farmers	Identified options used by NARS and development projects	Rural livelihoods improved

	<b>Outputs</b>	<b>Intended Users</b>	<b>Outcomes</b>	<b>Impact</b>
<b>OUTPUT 2</b>	Impacts of agricultural research on productivity, income, and rural welfare in the dry areas quantified and accessible to stakeholders			
<b>Output Targets 2006</b>	Socio-economic and institutional factors affecting the adoption of crop technologies in Egypt, Sudan, Ethiopia analyzed	NARS, development projects	NARS worked on solving identified constraints	Technology adoption and diffusion enhanced
	<i>Ex post</i> assessment of the impact of crop technological options on household income and its distribution in project sites in Syria and Iran completed ( <i>CP Water and Food</i> )	NARS, policy-makers, donors	Impact assessment results used by policy-makers and donors	Research relevance increased
<b>Output Targets 2007</b>	Adoption indicators and factors affecting the adoption of agricultural technologies identified in Egypt, Sudan and Ethiopia	NARS, development programs	Adoption information used by NARS	Better understanding of technology uptake by end users
	The potential impact of crop and livestock technological options on poverty and rural livelihoods analyzed in Uzbekistan and Syria	NARS, development projects, donors	Best-bet options promoted by NARS	Food security improved and income increased
<b>Output Targets 2008</b>	Frameworks and methodologies for assessing adoption and impact ( <i>ex ante</i> and <i>ex post</i> ) developed, documented and made accessible to users	NARS	Frameworks and methodologies used by NARS	NARS capacity enhanced
<b>OUTPUT 3</b>	Impacts of natural resource management (NRM) research on economic, social and environmental sustainability quantified and results made available to stakeholders			
<b>Output Targets 2006</b>	The environmental impact of NRM technologies in crop-livestock production systems quantified in selected project sites in Morocco and Tunisia	NARS, development projects	Results adopted by policy-makers	Increased investment in NRM technologies
<b>Output Targets 2007</b>	Benefits and costs of water harvesting options in Jordan and Syria quantified and documented	MP1, NARS, development projects	Development projects adopted profitable options	Increased investment in water harvesting techniques

	<b>Outputs</b>	<b>Intended Users</b>	<b>Outcomes</b>	<b>Impact</b>
<b>Output Targets 2008</b>	Frameworks and methodologies for valuating natural resources technologies and assessing their impact adapted or developed and made accessible to users	NARS, development projects, policy-makers	Frameworks and methodologies used by NARS	Research effectiveness increased
<b>OUTPUT 4</b>	Framework for community-based and participatory research approaches adapted or developed and made available to stakeholders (in collaboration with other MPs)			
<b>Output Targets 2006</b>	Participatory and community-based approaches adapted and implemented in several projects in Morocco, Algeria and Turkey	MPs, NARS, development projects	Community and participatory approaches used by NARS and projects	Enhanced technology uptake
<b>Output Targets 2007</b>	Frameworks for community-based and participatory approaches developed and shared with NARS	NARS	Community approach institutionalized by NARS	Enhanced technology adoption by end users
<b>Output Targets 2008</b>	Tools for successful implementation of participatory and community-based research approaches developed and made accessible to NARS	NARS	Participatory tools used by NARS	Increased technology uptake
<b>OUTPUT 5</b>	Policy and institutional options analyzed and priorities for public investment to improve rural livelihoods in dry areas identified ( <i>joint research with IFPRI</i> )			
<b>Output Targets 2006</b>	The effect of investments in dry areas on rural livelihoods in selected project sites in Morocco and Tunisia quantified, and results shared with NARS	NARS, development projects	Improved investment promoted by NARS	Improved rural livelihoods
<b>Output Targets 2007</b>	Comparative analysis of investment options in selected project sites in Morocco and Tunisia and calculation of returns to investment completed	NARS, development projects	Profitable options promoted by development projects	Improved rural livelihoods

	<b>Outputs</b>	<b>Intended Users</b>	<b>Outcomes</b>	<b>Impact</b>
<b>Output Targets 2008</b>	The returns to investments in the dry areas and their effects on rural livelihoods in three countries evaluated and results made available to decision-makers	NARS, policy-makers	Results adopted by policy-makers	Increased investment in dry farming
	Effectiveness of different policy and institutional options in dry areas in selected countries evaluated and documented	NARS, policy-makers	Improved policy and institutional options used by policy-makers	Increased technology adoption by end users
<b>OUTPUT 6</b>	Capacity of national research and extension programs in the application of economic tools, livelihood analysis, and impact assessment enhanced			
<b>Output Targets 2006</b>	Frameworks, tools and methodologies for livelihood analyses developed and made available to NARS	NARS	Developed frameworks and tools used by 3 NARS	Rural livelihoods better understood
<b>Output Targets 2007</b>	Three graduate research students in research related to poverty and livelihood analysis and impact assessment completed their degrees	NARS, Universities	Graduates are adequately trained	Enhanced NARS capacity
<b>Output Targets 2008</b>	Frameworks, tools and methodologies for assessing impacts of agricultural and NRM research used by five NARS	NARS	Tools used by NARS	Enhanced technology uptake
	International workshop/conference on assessing the research impact and rural livelihoods in the dry areas organized	NARS, IRC, advanced research institutes	Experiences shared	Enhanced capacity