



Research program on dryland systems

CGIAR Research Program on Dryland Systems

Launch Workshop

Held at the Holiday Inn Hotel Amman, Jordan

21-23 May 2013.

Workshop Documentation

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Institute for People, Innovation, and Change in organizations



Documentation of the Dryland System Workshop

This report captures the outputs of the Dryland Systems Launch Workshop held on the 21st to 23rd May 2013 in Amman Jordan. This report is not synthesized, but tries to capture the workshop output in a non-interpreted way.

THIS DOCUMENTATION IS TO BE A REFERENCE DOCUMENT for all participants and is to provide details of what transpired. Almost all results of the plenary presentations, working groups and plenary sessions are documented with no or minimal modification. It is to serve as a basis for workshop participants to strengthen their capacity as they build partnerships and create networks. Content of the report in no way reflects the position of PICOTEAM but is a compilation of participants' contributions.

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Executive Summary

The Drylands Systems Launch Workshop brought together diversified range of multi-stakeholders who innovatively defined the way forward on how to improve agricultural productivity, protect the planet, and alleviate poverty and hunger in the dry areas. The Launch Meeting of the CGIAR Research Program on Dryland Systems (CRP1.1) aimed to create a common understanding and commitment to the programme among the involved CGIAR Centres and partners and worked towards achieving the following specific objectives;

1. To reach a common and shared understanding of and alignment of activities towards the global programme framework
2. To develop concrete work plans for the regions and the strategic research themes
3. To elaborate the institutional arrangements
4. To work out partnership arrangements and modalities for effective delivery of the outputs and impacts: roles, expectations, responsibilities, accountability
5. To clarify the roles and responsibilities of CRP management and governance
6. To agree on the way forward for planning of work programmes

The workshop was officially opened by His Royal Highness Prince El Hassan Bin Talal. Prince Talal together with the leadership of the different CG centres involved in the process acknowledged the importance of the CRP programme in alleviating poverty and ensuring food security globally and pledged commitment towards making the process a success.

Presentations were made highlighting the current status of the CRP on Dryland Systems and the outcome of the inception phase of the CRP1.1.

The CGIAR reform process is focused on organizing a global research agenda at a CGIAR system level with the CRP as the portfolio. This change process is result-based. However, based on the realization the research has a long lag time and that impact cannot be predicted with certainty, Intermediate Development Goals (IDO) were defined. The IDOs were to be used to measure progress towards impacts. The following seven IDO were presented;

1. More stable and higher per capita income for intensifiable households (above an asset threshold)
2. More resilient livelihoods for vulnerable households in marginal areas
3. Women and children in vulnerable households have year round access to greater quantity and diversity of food sources
4. More sustainable and equitable management of land and water resources in pastoral and agro pastoral areas
5. Impact through better functioning markets underpinning intensification of rural livelihoods
6. More integrated, effective and connected service delivery institutions underpinning system intensification
7. Policy reform removing constraints and incentivizing rural households to engage in more sustainable practices that intensify and improve resilience

The participants had the opportunity to critically analyze each of the above IDOs and define the priority research issues within each IDO. They further identified the principle research outputs that could be delivered over the next two years.

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Finally, building on the regional input presentation and group outcome on the IDOs, the participants were organized into regional teams to reflect on what they want to do at the regional levels. Concrete and achievable action plans were developed by the participants based on a challenge that they could address in the regions.

Foreword by the Director General ICARDA

The Launch Workshop of the CGIAR Research Program on **Dryland Systems (DS-CRP)**, held 21-23 May, 2013 in Amman, Jordan, represents the culmination of years of preparatory work by ICARDA and its many partners to develop a global research program dedicated to improving food security and livelihoods in dry areas of the developing world. This preparatory work included: team composition involving wide range of stakeholders and revision of a comprehensive and multi-faceted proposal which was accepted by the CGIAR Fund Council in March 2013 on the recommendation of the CGIAR Consortium Board; an intensive one-year Inception Phase that covered detailed groundwork to characterize five target regions, and a series of Regional Inception Workshops where scientists and other stakeholders identified research priorities and activities designed to achieve development impacts in five target regions of the world. This report captures the outputs of the Launch Workshop. It is meant to serve as a reference document for participants and other stakeholders involved in the DS-CRP those who could not attend the Workshop.

Dryland production systems face serious constraints, including climate change, drought, floods, extreme temperatures, land degradation, poverty, high population growth, unemployment, social inequity, youth disenfranchisement, poor market development, and weak institutions. The **Dryland Systems Program** targets the vulnerable populations of dry areas in developing countries and the agricultural production systems on which they depend. Our starting point is the premise that successful dryland agricultural production systems have evolved through an integrated systems approach that includes the right mix of innovative partnerships, diverse technologies, and appropriate policies. To get this mix right and improve livelihoods in dry areas, it is important to use a systems research approach – that is based on sound principles of the biophysical and socio-economic sciences, development theory, institutional development and project management.

Dryland Systems was developed from the CGIAR Strategy and Results Framework (SRF) theme “Integrated Agricultural Systems for the Poor and Vulnerable,” which defines target areas as “systems characterized by major constraints, such as drought or other agro-climatic challenges, poor infrastructure and underdeveloped markets, or weak institutions and governance. **Dryland Systems** Program also addresses the new SRF goal of achieving core competency in the area of production systems research through inter-center collaboration, wide range of partners and integration of commodity, natural resource management and policy research to improve productivity and livelihoods in a sustainable manner at the national, regional and global levels.

The **Dryland Systems** Launch Workshop brought together a diverse set of stakeholders who used the Amman setting to map the way forward for the program to achieve its target impacts of reducing vulnerability and sustainably improving agricultural productivity to alleviate poverty and hunger in the dry areas. It was attended by more than 200 participants/stakeholders from 40 countries.

The Workshop had specific objectives that included: alignment of activities to achieve global program coherence and harmony; present the outcome of the Inception Phase of the Program, develop and elaborate Intermediate Development Outcomes (IDOs); presentation and discussion of cross-cutting themes and programmatic tools; develop workplans to define clear outcomes and outputs; elaborate institutional arrangements; delineate partnerships; clarify program management and governance ; and agree on a process and calendar for implementing activities within the five regions. This last objective is crucial so that Dryland Systems can progress swiftly from the planning phase to on-the-ground implementation of the research program, to obtain impact.

The Workshop's success would not have been possible without the support of its many enthusiastic participants from all partners, not the least of which was ICARDA's dedicated support staff. **We sincerely thank the many participants who made the Launch Workshop successful and most especially His Royal Highness Prince El Hassan Bin Talal for his stirring Keynote Address and generous patronage.** We also gratefully recognize the participation of Dr. Camilla Toulmin, Chair of ICARDA Board of Trustees, Dr. Frank Rijsberman, Chief Executive Officer, CGIAR Consortium, Dr Harry Palmier of Global Forum for Agricultural Research, and representatives of HE Dr. Hazem Nasser, Minister of Agriculture, the Hashemite Kingdom of Jordan, and the CGIAR partners.

**Mahmoud Solh
Director General
ICARDA**

Forward by the facilitators

The facilitation of the Dryland Systems Launch workshop was a challenging but very interesting and rewarding process. A lot of ground was covered. This was indeed a learning experience for both the facilitators and participants.

We would like to thank all the participants for their active participation and dedication throughout the workshop. Our special thanks also goes to the process steering group, which spent some time in reflecting with us the daily proceedings as well as jointly planning with us the next day's process.

We would also like to thank the ICARDA staff and all the partners for inviting us and supporting us during the facilitation of the workshop. To all the people who also worked in the background to support in the logistical arrangements for this workshop, we want to also say thank you! You have made our work very easy and more exciting.

We have really enjoyed working with you all and we wish you all the best as you get ready into the process of implementing your country action plans.

Dr Jürgen Hagmann, Edward Chuma and Judith Odhiambo



PICOTEAM

Institute for People, Innovation and Change in Organisations

Facilitation - Coaching - Research for Change

1) OPENING AND SETTING THE SCENE

The aim of this session was to open up the participants and create an informal environment of sharing, clarify expectations, objectives and overview of the programme for the coming days. It was designed to encourage participant interaction before starting planning activities.

1.1 Opening Ceremony

Opening remarks by His Royal Highness El Hassan Bin Talal

His Royal Highness (HRH) Prince El Hassan Bin Talal of Jordan delivered the keynote speech at the launch meeting of the Consultative Group of International Agricultural Research (CGIAR) Research Program on Dryland Systems. In attendance were some 200 international researchers, scientists, and agricultural specialists. HRH Prince Hassan expressed his admiration about the CGIAR, acknowledging the consortium as a leading centre in implementing global research projects that enhance food security in dry areas.

Prince Hassan spoke about the irrational exploitation of resources and the way it threatened the lives of the indigenous local communities whose participation in such programs is crucial. He stated that he believed societies could work together to improve their living conditions, especially where common challenges exist.

He also appreciated the global nature of the meeting which is organized in partnership between international centres and local institutions in five target regions: West Africa Sahel and the dry Savannas, Eastern and Southern Africa, North Africa and West Asia, Central Asia and the Caucasus, and South Asia. The uniqueness of this program lies in its focus on the common problems and constraints facing dry areas.

1.2 Getting to Know Each Other

1.2.1 Introduction of the facilitation team and their approach

Edward Chuma introduced himself as facilitator from PICOTEAM, the organization within which he operates. PICOTEAM works on change management and facilitation processes. The full meaning of PICOTEAM is “Institute for People Innovation and Change in Organizations”. PICOTeam is about facilitation, coaching, and research for change. PICOTEAM has a lot of experience in strategic planning and institutional changes process. He introduced Judith Odhiambo, who was to support the documentation of the

Process Steering Group

It is a mechanism for co-management of the workshop by the participants.

Tasks:

- To obtain feedback from the participants on the content and process
- To plan together with the facilitator the next day in the evening.

meeting. To enhance effective deliberation and interaction during the meeting, the following core principles and rules were presented as the basis of operation.

1.2.2 Workshop Process Steering Group

After the introduction of the facilitation team, the process steering group (PSG) which is constituted of a cross-section of participants and organizers and who takes responsibility in the co-management of the workshop was introduced. The PSG will meet at the end of the day to review the process and progress and together plan for the following day. This will harness the best energy of the group and be able to provide room for flexibility to accommodate the interests of the participants as best as possible.

The group does not represent actors but is about co-planning and steering the process, recognizing the different interests of the main stakeholders and adequately representing those in the programme and the content of the workshop. The process-oriented procedure allowed the participants to take an active role, responsibility for success of the workshop and ownership of the outcomes. After introducing the names of the people in the PSG (see the box below), he urged the participants to give feedback to the PSG.

Facilitation Principles

These three days were meant to be interactive and therefore Edward introduced to the participants some key facilitation principles that would ensure an atmosphere that allow free interaction by the participants and the facilitators. These principles are core values and some rules for table interaction:

The core values include:

Informality-(relaxed atmosphere with discipline): It means doing away with formal hierarchies. If we want a productive but relaxed informal meeting, we should first agree to call each other by first name. Informality also means that we are free to stand up when we feel tired. Discipline basically means keeping time.

Inclusiveness: This meeting will foster and encourage the full participation of each and every participants often identifying and urging the quiet ones to engage. Again, it is important not to exercise hierarchies. This should apply also in the table groups. Always encourage the quiet ones to participate and give their personal perspective. It is not about senior management team dominating but about all stakeholders.

Openness, transparency, accountability- Edward indicated that there should be no hidden agendas, so he urged the participants to open up and bring everything on the table- it is about open engagement. It is important to get the best out of all the participants and critical review and address the real issues.

Appreciate the difference in thinking: We are all coming from different backgrounds having experienced different working contexts and generated diversified experiences. No one is therefore right or wrong. We are all here to learn from each other. It is therefore very important to accommodate the views of others and where possible generate the learning required.

No defensiveness: It is not about defending what we do or what we have been doing, but about exploring the issues in depth. The more we do that, the more we will move forward and reach consensus.

No Jargon-Lets use words and statement that create a common understanding and is easy to comprehend. It is important that we use as little abbreviation as we can and where necessary, clarify for enhanced understanding. Feel free to ask questions on what you do not understand. We should all express ourselves in a language that others from different domains can easily understand.

Understanding and accepting reality: However, there are realities on the ground which have hampered certain things from taking off which needs to be accepted. We should therefore accept the realities on the ground and forge clear way forward on addressing issue. Reality is stubborn and does not go away.

Constructive controversy: Controversy is a great source of creativity. We should be controversial but with a creative mind; it is not about blaming each other. In addition, controversy brings out deep and innovative discussions and challenges to think.

Creativity and innovation-thinking out of the box-There is a need to challenge each other to think beyond the usual. We have been working in the same environment for a long time and it would be important to step out and look at issues from a different angle.

Honesty and Political incorrectness –People tend to be politically correct, especially when real sensitive issues are discussed. This often makes them to put the real issues under the carpet. Edward then encouraged the participants to be ‘political incorrect’ and bring out things on the table, without hiding the real issues. He encouraged them to call a spade a spade and deal with it, rather than being nice and use words that are sweet, but in the end we do not know what it really means and go home frustrated.

Rules for the interaction at tables are:

After the facilitation principles (above), Edward presented some rules for interaction at tables.

- Sit on a new table with new people every half day to enhance interaction with all participants
Only present once
- Encourage the quiet ones
- Control self and other by giving a chance to others
- While given a task. think first individually and make note of your points, then discuss in the tables
- Make your contributions short. No speeches be to the point
- No computers during sessions

1.3 Who is in the room: group composition

To get a feel of who was represented in the meeting and how it may have had implications on the discussions, the participants were asked to stand up when their stakeholder group was called out. The differentiation exercise was done to reflect the participant representation at the meeting and how the different experiences may impact on the workshop outcome.

Who is present?

Gender: There were 11 women with the majority of the participants being men. It was observed that there were few women in the CGIAR research programme. There is a need to increase the number of women in the programme to enhance gender inclusivity. The women were asked to distribute

themselves around the tables to create a balance. It was also important for the men to step out and express the needs and expectation of the women where need be during the process.

Design of the CRP programme: 35 participants have been involved in the design of the CRP programme. Those who have been involved in the process were asked to think outside the box, take this time to reflect and accommodate the difference in thinking of the newcomers. Those who have not been involved should grasp and work towards contributing to the meeting. A lot of thought and background work has gone into the planning. The participants were therefore asked to recognize the work that has already been done.

Researchers: There were less than 20 non researchers in the room. These non researchers were involved in disseminating research technologies, empowering young professionals and getting them involved in agriculture and implementing research results. It was noted that being a meeting dominated by researcher; there was a risk that the discussions would tend to be supply driven. Therefore, there was a need to accommodate the demand side to bring about an effective change process.

1.4 Participants' Expectations

In this part participants presented their expectations in terms of what should and should not happen in the meeting. Representatives of stakeholder groups presented their views to the plenary. Below are the expectations.

- Equal distribution of women in the table groups to express the needs of women.
- Come up with plans that can work in the field
- Stand up and speak-Proactive
- Clarity on real issues happening on the ground for effective implementation of the programme.

1.5 Understanding agenda and process

After getting to know each other better and knowing what participants expectations were in terms of what should and not happen in this workshop, the anticipated outputs of the workshop and the program overview as discussed and agreed upon by some of the process steering group in the previous day was presented to the participants.

1.5.1 Workshop objectives

The Launch Meeting of the CGIAR Research Program on Dryland Systems (CRP1.1) aims to create a common understanding and commitment to the programme among the involved CGIAR Centres and partners.

Specific objectives were:

- To reach a common and shared understanding of and alignment of activities towards the global programme framework
- To develop concrete work plans for the regions and the strategic research themes

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- To elaborate the institutional arrangements
- To work out partnership arrangements and modalities for effective delivery of the outputs and impacts: roles, expectations, responsibilities, accountability
- To clarify the roles and responsibilities of CRP management and governance
- To agree on the way forward for planning of work programmes

2) STATUS AND PLAN OF THE CRP TO DATE

This session worked towards creating a common understanding on the status of the CRP on Dryland Systems globally and at the regional levels. The outcomes of the inception phase of the CRP1.1 in the regions were also presented. This provided opportunity for the participants to share challenges and possible success factors from the regions. The success of CRP1.1 will also depend on how well the cross cutting themes are integrated in the programme. Key presentations on gender and youth were made. The other key presentations covered Impact Pathways and Monitoring and Evaluation and different forms of support that would be provided to the regional teams.

2.1 Current status of the CGIAR Research Program (CRP) on Dryland Systems

Key presentation was made giving highlights of the CRP on Dryland systems after its one-year inception phase. Participants were briefed on the major constraints undermining food production and agriculture in the dry areas of the developing world – including environmental degradation, groundwater depletion, and drought. It was also stressed that climate change is expected to worsen these constraints – and others – during the following decades as conditions become hotter and drier.

Highlights of the CRP on dryland systems by Dr. William Payne

The Dry Areas = Fragile Eco-systems

- Physical water scarcity
- Rapid natural resource degradation and desertification
- Groundwater depletion
- Drought
- Climate change will make it drier

Prominent Features of Drylands

- **Cover 41% of the earth's surface**
- **Home to over 2.5 billion people – and the majority of the world's poor.**
- **About 16% of the population lives in chronic poverty**
- **Age distribution skewed towards youth**
- **Urbanization, unemployment, rising food prices, political unrest**
- **93% of malnourished live in dry areas**

Drylands Systems

Dryland Systems targets the poor and highly vulnerable populations of dry areas in developing countries and the agricultural systems on which they depend

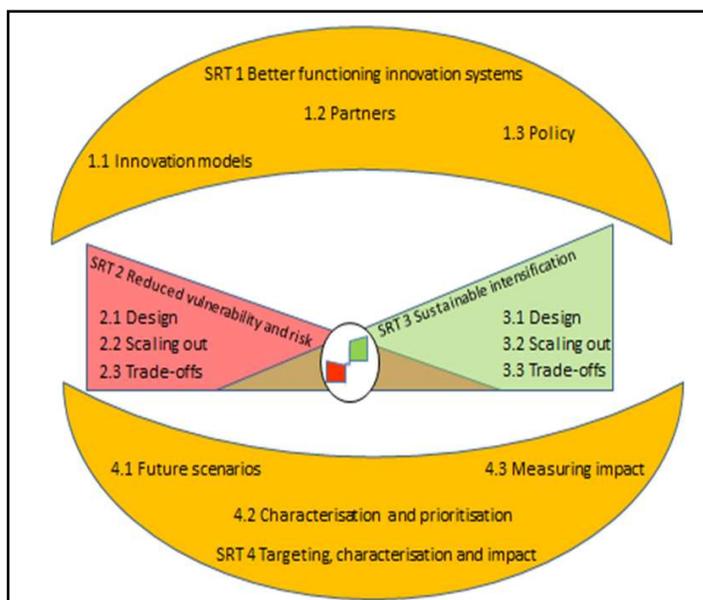
CGIAR System Level Outcomes

- Reduced rural poverty;
- Improved food security;
- Better nutrition and health; and
- Sustainable management of natural resources.

Conceptual Research Framework

SRT2: *Reducing vulnerability and managing risk*

SRT3: *Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets*



Strategic Theme	Research and Output
<ul style="list-style-type: none"> Approaches and models for strengthening innovation systems, building stakeholder innovation capacity, and linking knowledge to policy action 	<p>Approaches and models for strengthening innovation systems, building stakeholder innovation capacity, and linking knowledge to policy action</p> <p>Enhanced capacity for innovation and effective participation in collaborative “IAR4D” processes</p> <p>Strategies for effectively linking research to policy action in a dryland context.</p>
<ul style="list-style-type: none"> Reducing vulnerability and managing risk through increased resilience 	<p>Combinations of institutional, biophysical and management options for reducing vulnerability designed and developed</p> <p>Options for reducing vulnerability and mitigating risk scaled-up and -out within regions</p> <p>Trade-offs amongst options for reducing vulnerability and mitigating risk analyzed (within regions). Knowledge-based systems developed for customizing options to sites and circumstances</p>
<ul style="list-style-type: none"> Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets 	<p>Sustainable intensification options designed and developed</p> <p>Sustainable intensification options out-scaled</p> <p>Trade-offs amongst sustainable intensification and diversification options analyzed and knowledge-based systems developed for customizing options to sites and circumstances</p>
<ul style="list-style-type: none"> Measuring impacts and cross-regional synthesis 	<p>Future scenarios and priority setting</p> <p>Livelihood and ecosystem characterization.</p> <p>Across-region synthesis of lessons learnt from SRTs 2 and 3</p> <p>Program impacts measured.<</p>

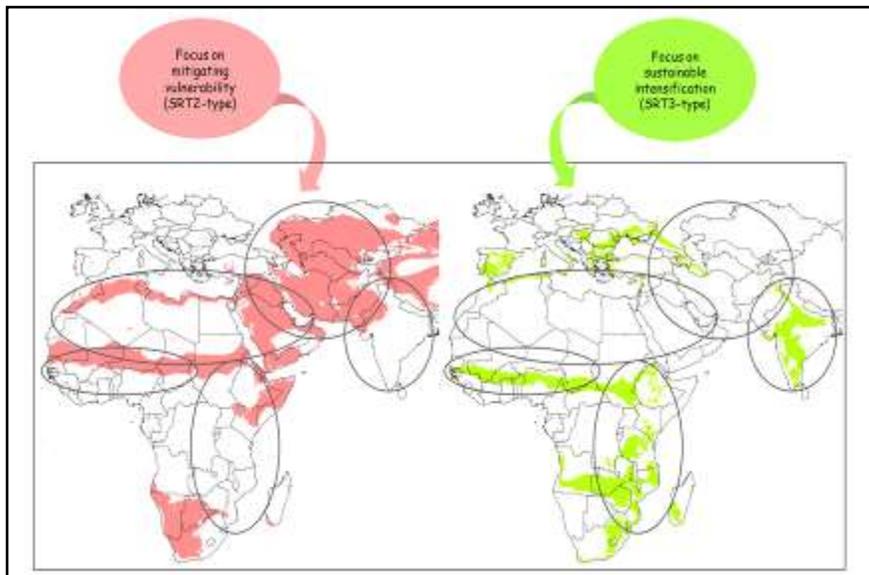
Criteria for Target Area Selection

Criteria	Limits for SRT 2	Limits for SRT 3
Length of growing period	<90 days	90-180 days
Distribution of poverty		
Hunger and malnutrition (food security, no of people, % of people)		
Aridity Index	0.03 to 0.35	0.35-0.65
Environmental risk (Rainfall variability, access to irrigation,	CV>15%	CV<15%
Land degradation(soil salinity, soil erosion)	High	Low-medium
Market access	Travel time >2 hrs	Travel time <2 hrs
Population density		

Dryland Systems focuses on two broad categories of agro-ecosystems

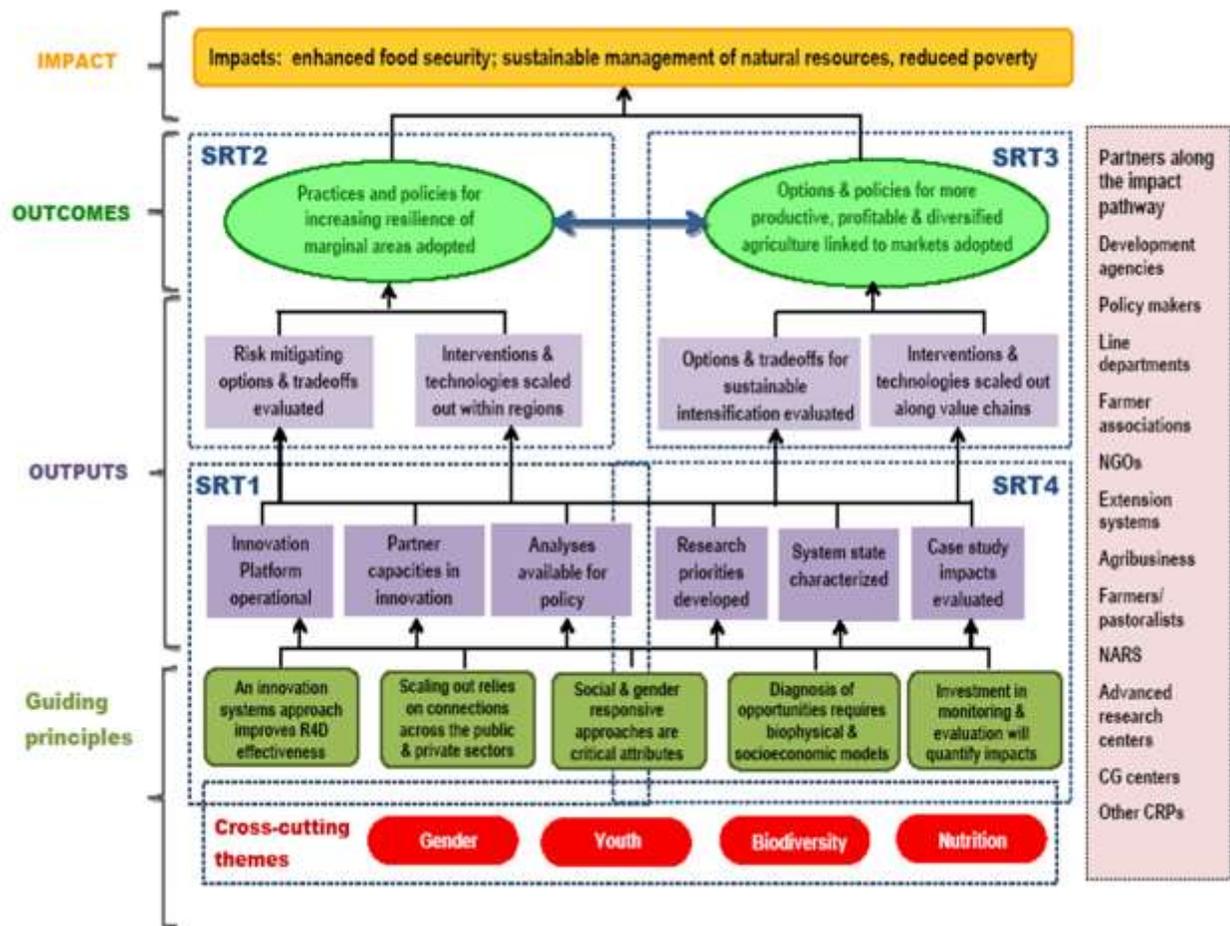
SRT2: Reduced vulnerability and increased resilience to shocks

SRT3: Sustainable intensification to reduce food security and generate income

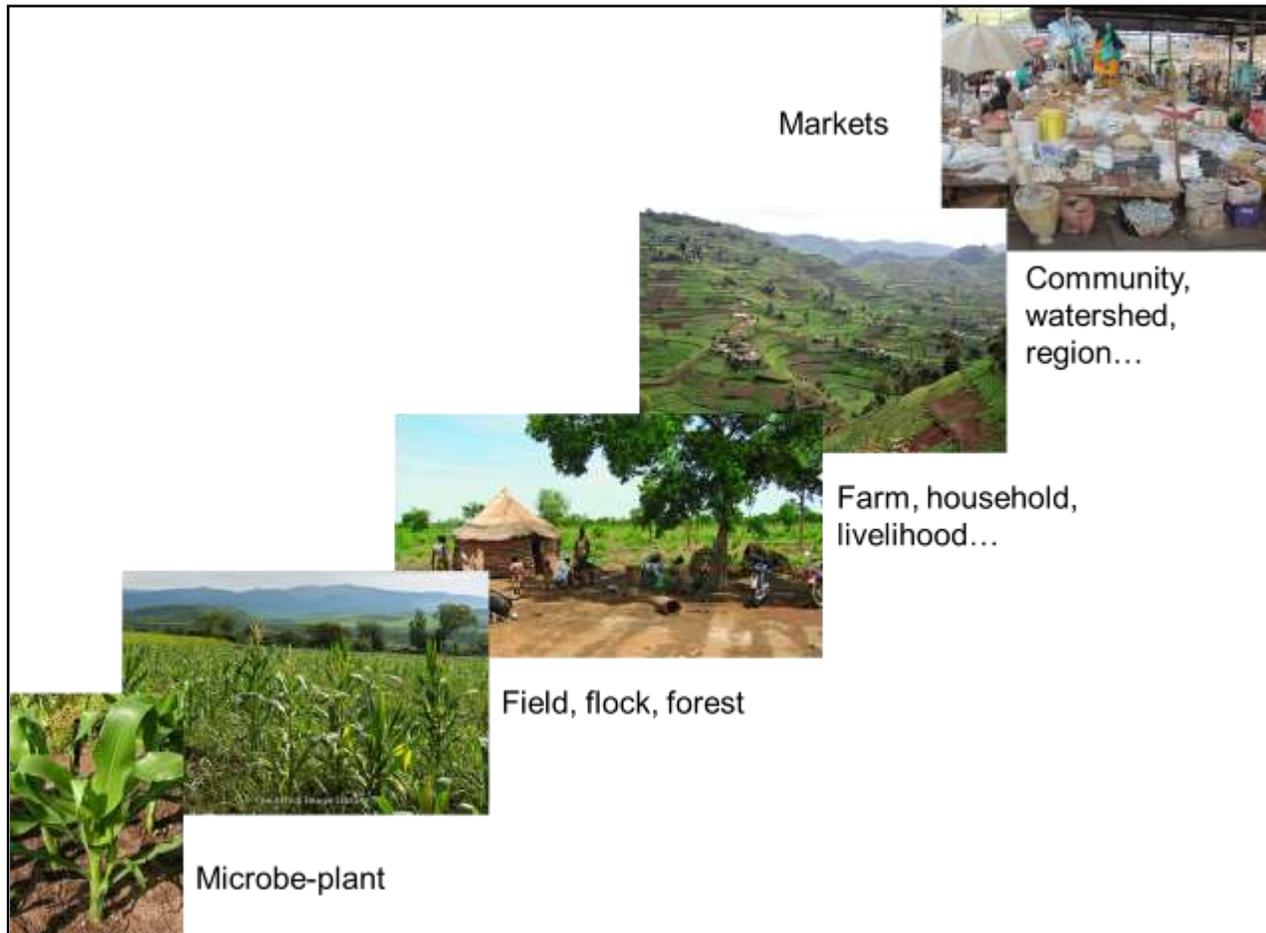


Characteristics of potential action sites in Target Areas

Target Area	Potential Action Site 1	Potential Satellite Site 1	Potential Satellite Site 2
Country			
Geographical location			
Accessibility			
Potential for hypothesis testing			
Representativeness			
Potential for out- scaling (impact)			
Potential to attract funds			
Potential to interact with CRPs			



Multiple scales and disciplines



Cross-Cutting Themes

- Gender
- Youth
- Biodiversity
- Nutrition
- Capacity building

Gender Matters in Agro-ecosystems

No development if views and needs of women are not addressed

- Land tenure
- Natural resource access (trees, fields)
- Food preparation and processing
- Household nutrition

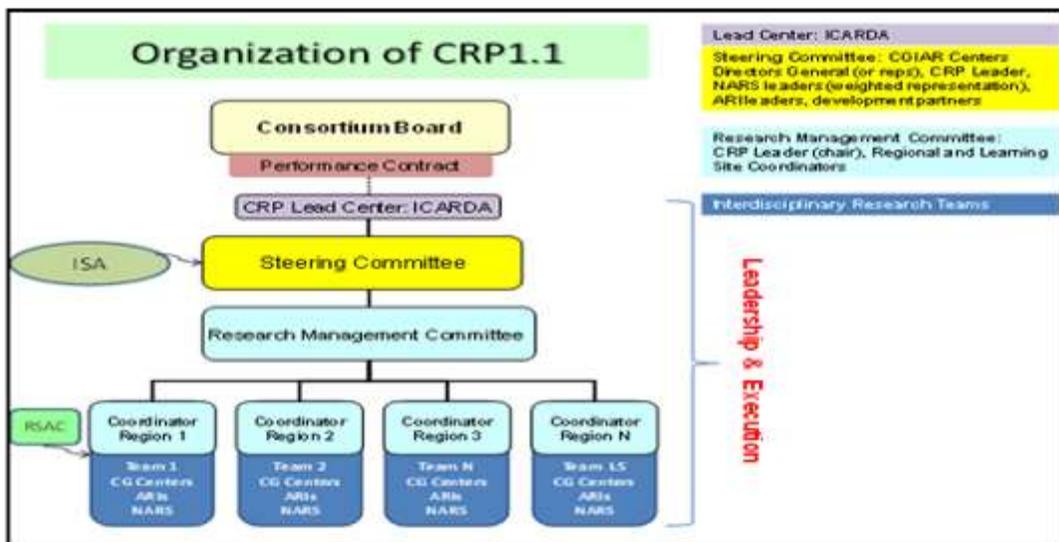
- Varietal assessment
- Use of disposable income
- Landed and Landless labor

Culture- and agro-ecosystem-dependent

Partnership in Dryland Systems

- Part of conceptual framework and one of four Strategic Research Themes
- Critical to out scaling and therefore impact
- Partners set research priorities and identified “Action Sites”
- Partners are explicit part of governance

Central Asia & Caucasus					
Problem: Sustainable Management of natural resources					
SRT	Desired Outcome	Hypothesis	Outputs	Activities	Objectively Verifiable Indicators
SRT2-3	Improvement of integrated land conservation. Watershed management is established and operational in Rasht and Kyzyl-Suu Valleys and Aral Sea region.	Development and adoption of an innovative knowledge platform for integrated land conservation, watersheds management in upper and lower reaches of the Amudarya and the lower reaches of Syrdarya will lead to improved institutional functioning and responses in addressing agricultural constraints (for rangelands and irrigated agriculture)	Output 2.1. Innovation knowledge platform for integrated land conservation, watersheds management is established and operational in Rasht and Kyzyl-Suu Valleys and Aral Sea region	Activity 2.1.1: Knowledge synthesis, generation, packaging and dissemination (knowledge platform) of Sustainable Land and Water Management practices in the Aral Sea Basin (Central Asia) Activity 2.1.2:	Number of improved technologies and management options adopted by participating farmers and end-users.



Inception Phase

- Groundwork for baseline characterization
- Workshops to set Research Priorities

Common Ground

1. 21 Constraints
2. 20 Outputs
3. 16 Hypotheses
4. 20 Outcomes

Remarks and clarifications

- There are a lot of outputs from the research work. This is the time to bring out implementation priorities leading to development. Move from research priorities towards research for development.
- ICARDA is a research organization. However, research for development at the community level is one to of the priorities. The focus of the discussions should be directed towards designing an effective implementation phase.

2.2 Outcome of the inception Phase of CRP1.1

The inception phase, which was held in collaboration with national and regional partners in each of the Program's five target regions, provided an opportunity to gather baseline data on conditions and agricultural systems, and develop a conceptual framework. Four strategic research themes were eventually defined: strengthening innovation systems, reducing vulnerability, sustainable intensification, and measuring impacts. The regional Program leaders also decided to target two broad area types: low productivity marginal areas which require efforts to reduce vulnerability; and high potential areas that could benefit from sustainable intensification. Where target areas fell into these two broad categories depended on a range of different criteria including: length of the growing period, distribution of poverty, aridity index, and environmental risk. In addition to the main research themes, cross-cutting themes such as gender and youth were also applied and emphasized.

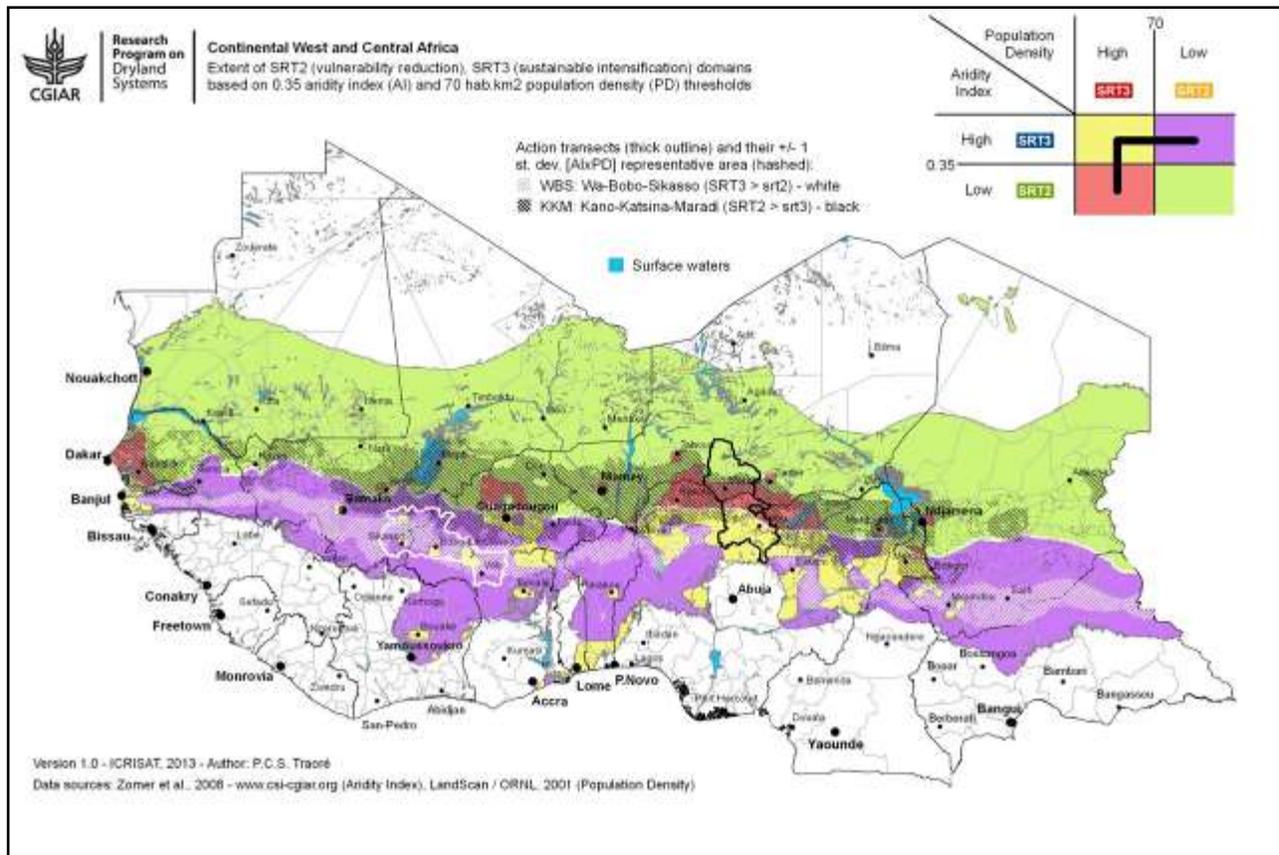
The reports back on the outcome of the CRP1.1 inception phase within the different regions and inclusion of cross-cutting themes within the programme created a common and clear understanding among the different partners in the meeting. This also provided opportunity for the different stakeholders to identify niches where their contributions and participation would create maximum impact. Partnership is critical to scaling out and creating a ripple effect in terms of success within the region and globally.

2.2.1 West Africa Sahel and Dryland Savannah

Presented by Dr. Antoine Kalinganire

WAS & DS countries

1. Burkina Faso
2. Ghana
3. Mali
4. Niger
5. Nigeria



Contrasted trans-boundary **action transects** sample larger biophysical and socio-economic variation than any administrative unit of comparable area. Already intensified and highly populated, **KKM** may dominantly focus on **vulnerability reduction**. Conversely, **sustainable intensification** should be prioritized over the extensive, sparsely populated **WBS**. Within and between-transect knowledge transfers will be promoted.

Inception phase achievements WERE&DS:

- Intense 6-month period ground work to characterize the systems (biophysical and socio-economical), including defining major constraints to an enhanced agricultural productivity.
- Organization of a regional Inception Workshop.

- Participate in the 11th International Conference on Development of Drylands, Beijing. Paper finalized and being reproduced.
- Formulation of hypotheses and defining research questions in different action sites.
- Building partners capacity (FMNR, Rapid Tree metrics & GIS, etc.)
- Work plan & Budget for 2013.
- Key partnerships and potential roles in the implementation of the program.

Planned key activities:

- Establish reference situation - baselines for the action sites support systems approaches.
- Assess, quantify and monitor biomass and resource flow in action sites to promote sustainable intensification and vulnerability reduction.
- Review past work on dryland systems and draw lessons on successes, failures and gaps in knowledge for sustainable intensification and vulnerability reduction.
- Facilitate effective linkages and knowledge exchange for improved system productivity, better market access and financial services.
- Develop and test intensification options and evaluate vulnerability and risk management strategies.
- Coordinate and harmonize database management, and research methods.

Partners participation

Local institutions:

- Farmers' organizations (CBOs)
- NARES
- Private sector
- Development organizations, NGOs, Women Groups, etc.

Regional and international institutions:

- ARI (CIRAD, CSIRO etc.)
- Regional organizations (ECOWAS, CILSS, CORAF, FARA, etc.)
- International organizations (AVRDC)
- Universities (Wageningen, Reading etc.)

CGs:

- CGIAR Centers (ICARDA, IMWI, ICRAF, CIAT, CIP, ICRISAT, ILRI, Bioversity...)
- Other CRPs

Collaboration and partnerships are fundamental to the operational strategy of Dryland Systems – a lot of work to be done in this area

Projects contributing to the DS CRP

- An integrated cereal-livestock-tree system for sustainable land-use and improved livelihoods of smallholder farmers in the Sahel (Enhance productivity, livelihoods and sustainability under changing climate and increasing land degradation) (CORAF/AusAID)
- Sustainable Intensification of Cereal-Based Farming Systems in the Sudano-Sahelian Zone (USAID)
- Agro-ecological intensification of sorghum and pearl millet-based production systems in the Sahel through agroforestry: linking farmers' knowledge to process-based science Agro-Ecological Intensification (McKnight)
- Building Bio-carbon for rural development in West Africa (demonstrate the multiple developmental and environmental wins that result from a high value bio carbon approach to climate change and variability in large landscapes) (Finland),
- Regional program on food and water in the Sahel and the horn of Africa: regenerating dryland farming systems by creating an Evergreen Agriculture (The Netherlands)
- Parkland trees and livelihoods: adapting to climate change in the West African Sahel (diversify, improve and conserve native tree species in parkland agro forests) (IFAD)

Remarks and clarification

Question: Did the private sector effectively participate in the drylands systems design process?

Response: There are few partners currently on board. However, we are working towards getting more partners on board. Policy makers and local governments at the district level are part of the process. FARA is one of the partners that we are working with and there are no problems.

Question: Do you have plan B in case the sites you're working on become dangerous. Are the sites contaminated considering that they have been used before?

Response: There are different sites e.g. satellite sites that can be worked on in case of a problem

Question: Through universities, can young professionals and youth be included in the programmes

Response: We work with universities. This provides opportunity for young people to come on board. There are several graduate opportunities that young people should exploit. There are however very few organized youth groups.

2.2.2 East and Southern Africa

Presentation by Dr Polly Ericksen

Steps in ESA

1. Characterization
2. Inception workshop: hypotheses and outcome pathways
3. Gradients?

Characterization SRT 2: Production system and rainfall (CV)

		SRT2 Action Site	SRT2 Satellite Site
Climate	Rainfall (mm)	200 - 1600	460 - 1550
	Temperature		
	LGP (days)	<90	90-290
Landscape	Soils	Calcaric Regosols (32%)	Calcic Cambisols (18%)
	Land cover	Herbaceous cover (48%), sparse shrub (44%)	Herbaceous cover (60%), cultivated and natural vegetation (21%)
	Production system	Livestock only system (90%), rain fed crop/livestock system (2%)	Livestock only system (40%), rain fed crop/livestock system (23%)
Socio-economic	Human density (sq km)	9.4	54
	Goat density (sq km)	4	24
	Sheep density (sq km)	54	209
	Cattle density (sq km)	7	25

Component		Examples of Possible Indicators
Adaptive capacity	Socio-demographic profile and human capital	Dependency ratio ((<15 yrs + ≥ 65 yrs)/ 19 to 64 yrs)
		Percent of female-headed households
		Percent of households where head of household has not

		attended school
		Literacy and level of education
	Security of access and entitlements/ political capital	Equity
		Representation of women in local politics
		Good governance criteria
	Institutional/governance dimensions of adaptive capacity	Institutional diversity, overlap and redundancy
		Institutional memory and continuity
		Institutional linkages
		Scope for self-organization
	Livelihood	Percent of households with family member working in a different community
		Percent of households dependent solely on agriculture as a source of income
		Household physical, financial and natural capital
		Average Agricultural Livelihood Diversification Index
	Social and knowledge networks	Average Receive: Give ratio
		Average Borrow: Lend Money ratio
		Percent of households that have not gone to their local government for assistance in the past 12 months
		Mobile phone network coverage
		Availability of market information

Key Hypotheses SRT 2

- (1) Attempts to reduce vulnerability are undermined by a limited understanding of how many people are vulnerable, and to what extent, in different dryland systems.
- (2) Low political will to develop dry lands and ineffective governance systems result in increased vulnerability to shocks.
- (3) Despite strong growth in demand for livestock in both domestic and international markets, the productivity of many smaller pastoralists in the drylands is declining.
- (4) The productivity of smaller pastoralists is further undermined by a lack of investment in markets for other livestock-related products.
- (5) Growing and urbanizing populations in the drylands depend on non-pastoral economic activities.

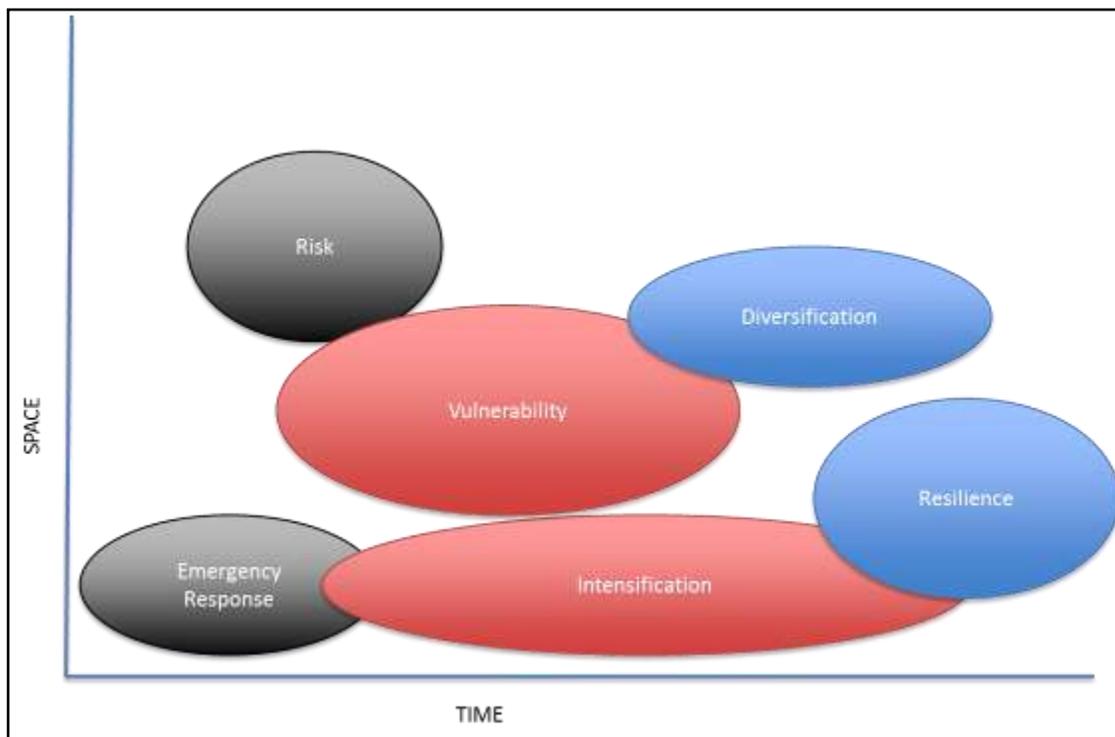
Key Hypotheses SRT 3

1. Agricultural intensification can only contribute substantially to reducing household poverty and food security with sufficient assets and agro ecological potential.
2. It is possible to increase food production in a more sustainable way, improve food and nutritional security and increase agro-ecosystem resilience, all at the same time.
3. System characteristics can be identified that quantify the potential of subsistence systems to intensify.
4. Intensification interventions can be combined with better natural resource management practices in order to enhance system sustainability without affecting productivity.
5. Improved links to markets will lead to sustainable intensification on farms with access to sufficient land and water resource.

Alternative Framework

RV- IP Continuum

Concepts of Drylands Development



2.2.3 North Africa and West Asia

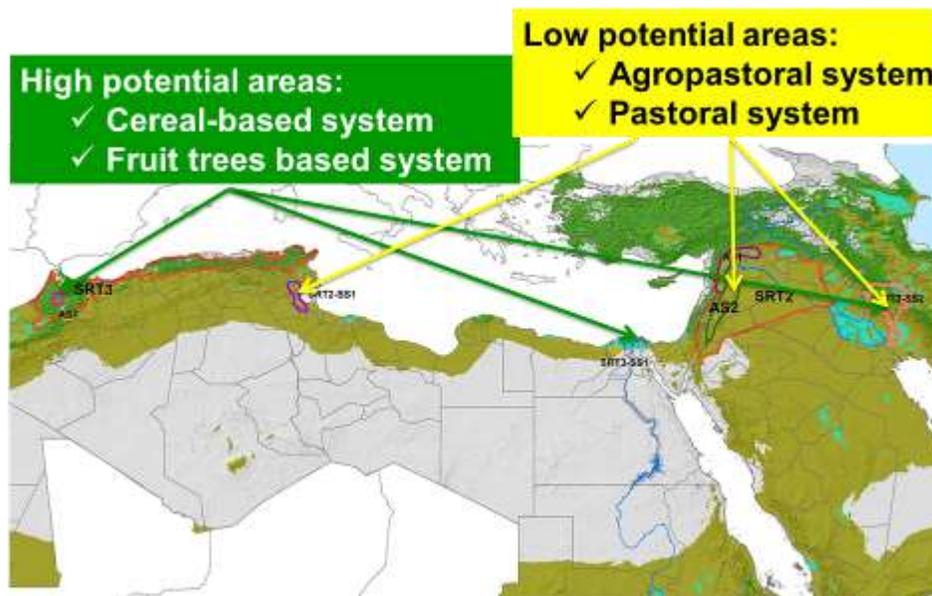
Presented by Dr Ali Nefzaoui

NA & WA Target areas and action sites

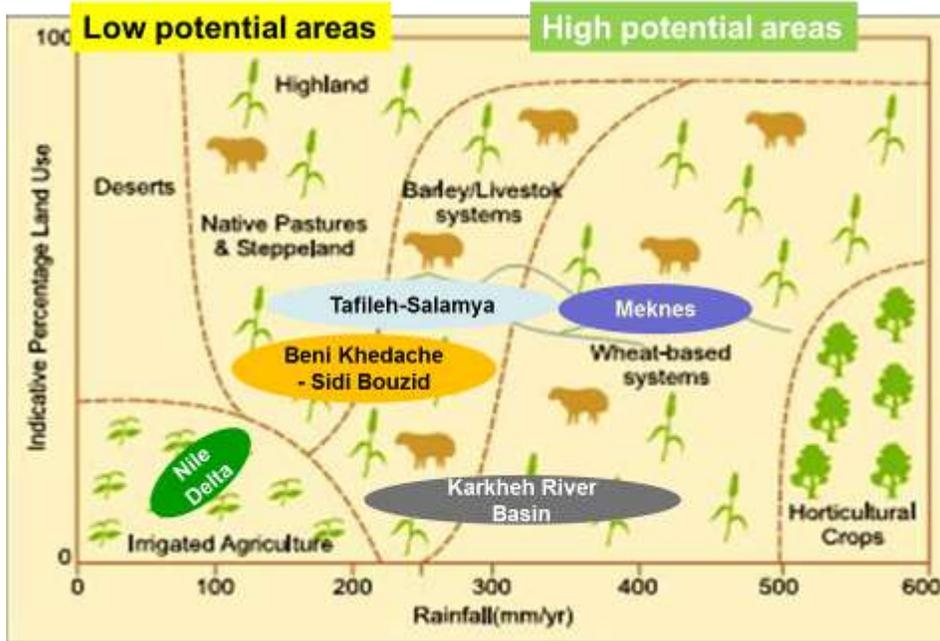
Sites characterization

- Biophysical descriptors
 - Climate
 - Topography
 - Soils)
 - Water resources
 - Land use/land cover
 - Land degradation
- Socio-economic descriptors
 - Demography
 - Agricultural systems
 - Governance, institutions, policies
 - Opportunities for agricultural research

Sites characterization

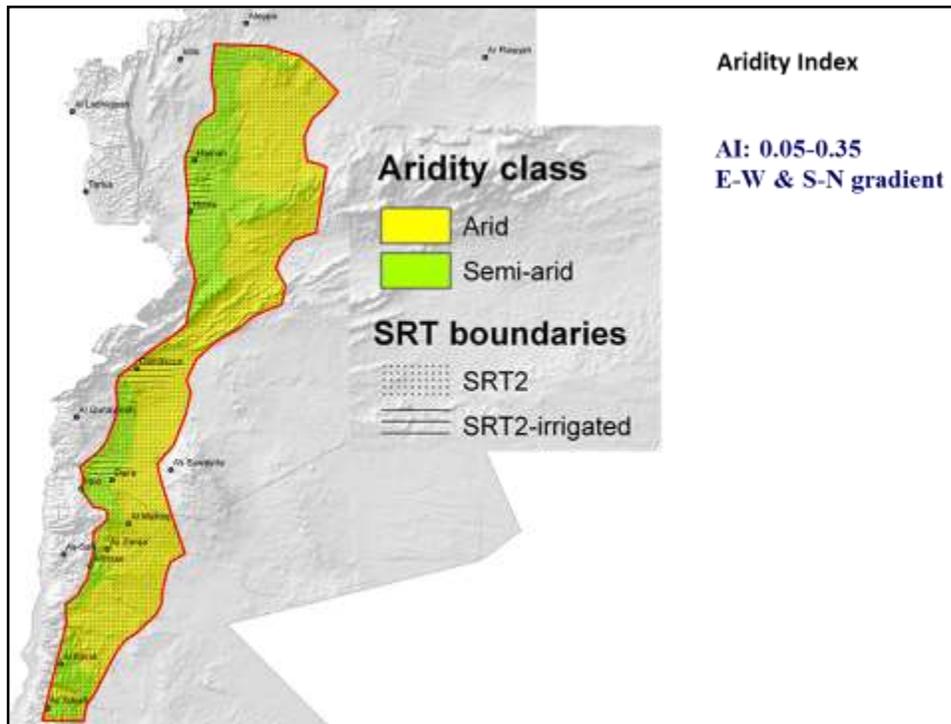


Main production systems

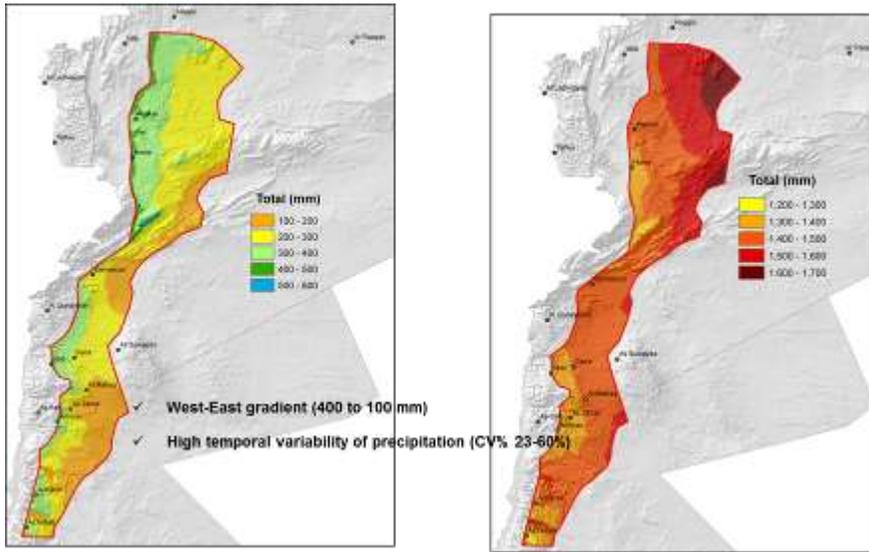


Reducing vulnerability and managing risk in NAWA "Low potential areas"

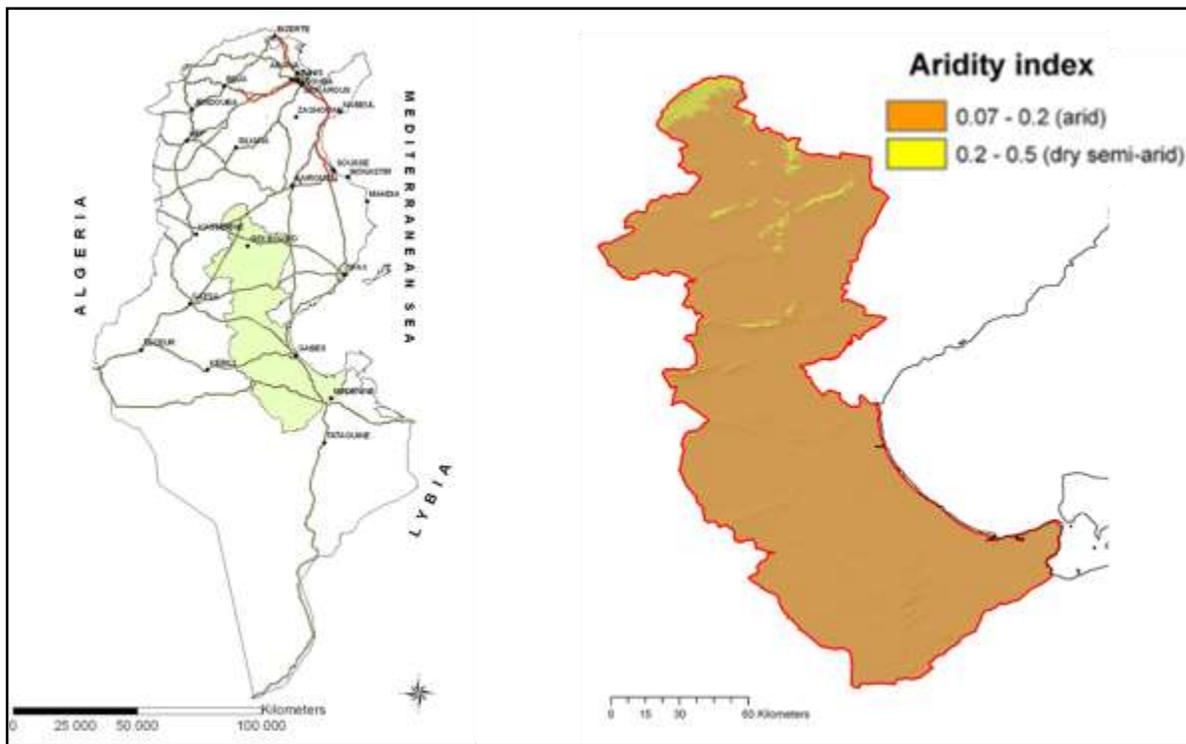
Syria-Jordan Site



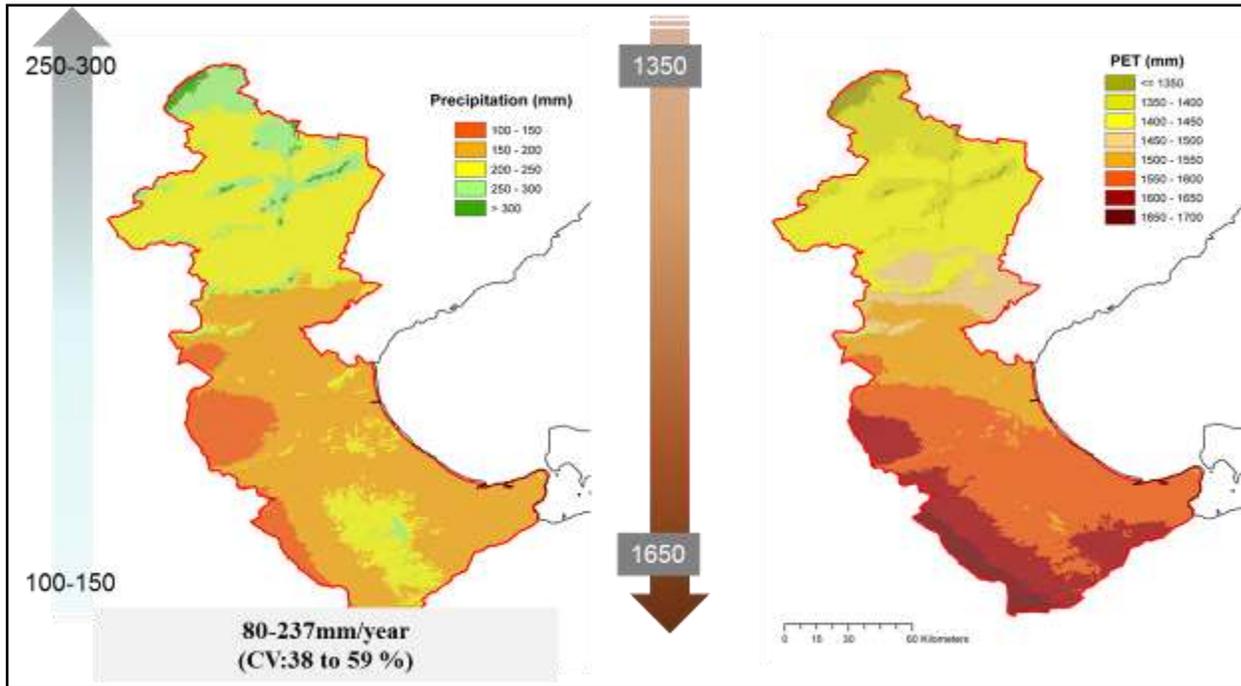
Syria-Jordan Site (Climate/ Precipitation and PET)



Béni Khédache-Sidi Bouzid Site



Béni Khédache-Sidi Bouzid Site Precipitation & PET



Low potential areas



Low potential areas

Constraints

- The driest areas of NA&WA embrace more than 60 % of the arable land.
- High population growth rates, large and rapidly increasing food and feed deficits, rural poverty
- Limited natural resources, especially water
- Rural livelihoods based on production systems in which small ruminants represent the principal economic output.
- Production systems in transition
- Inappropriate policies of land use, incentives and lack of secured property rights
- More frequent and prolonged droughts associated with global warming have worsened the vulnerability of agro pastoral societies

Hypotheses

Hypothesis 1: The use of **innovation platform (IP)** in community-based organization of rangeland involving agro-pastoral stakeholders will help halt land degradation and restore ecosystems and improve livelihoods

Hypothesis 2: **Rangeland** production systems can be made less risky and more **resilient** by integrated technical, institutional and policy innovations that aim at rangeland rehabilitation and sustainable management

Hypothesis 3: Barley-sheep system productivity and resilience can be enhanced through integrated improvements in policy, institutional set-up and technologies (feed, health, adapted breeds), and markets (capital, input and product).

Hypothesis 4: Integrating appropriate water harvesting as well as soil and water conservation practices will improve livestock productivity and reduce risks and vulnerability of agro-pastoral communities

Hypothesis 5: System analysis including bio economic modeling and market analysis will facilitate policy and institutional changes and the out scaling of innovations

Hypothesis 6: Equitable distribution of benefits and responsibilities through more effective participation of youth and women in the decision making process will enhance socio-economic development of the target areas

Outputs

Output 1: Functional innovation platforms established for the design and transfer of improved R4D options in target sites

Output 2: Integrated socio-economic and biophysical baseline data established and regularly updated for monitoring and tracking the dynamics of the systems and program outcomes

Output 3: Adapted technological, institutional and policy options (TIPOs) for reducing vulnerability of the barley–sheep production system developed and implemented

Output 4: Options for improving rangeland-livestock system resilience, livelihoods of agro-pastoralists and natural resources conservation developed

Output 5: Gender-specific options for income diversification & risk management for vulnerable households in the target sites

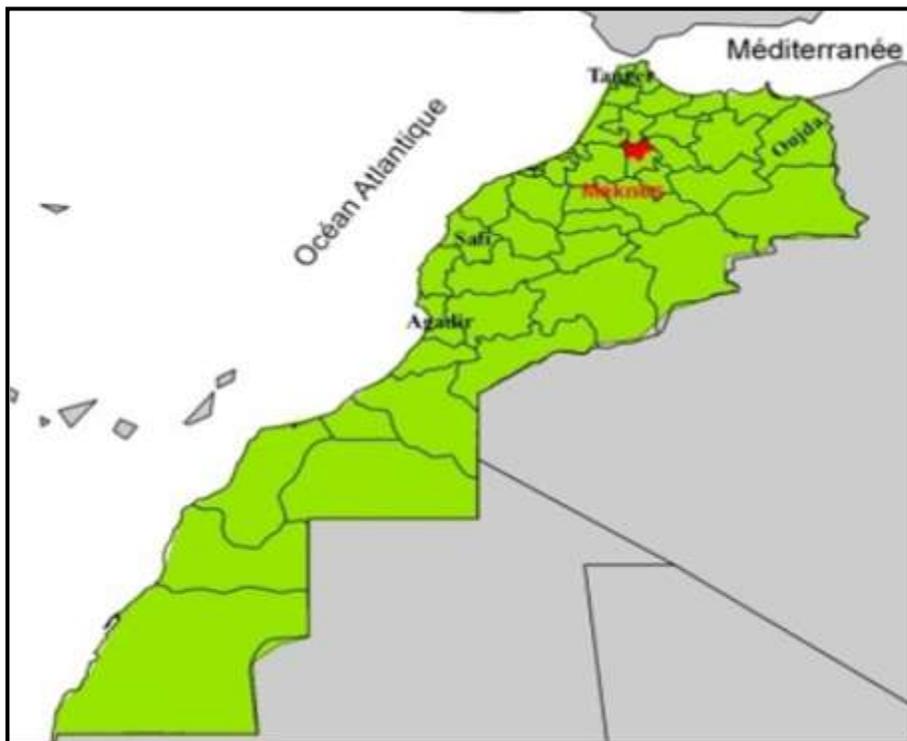
Output 6: Trade-offs amongst options for reducing vulnerability and risk mitigation analyzed to develop adapted coping strategies and optimized systems design, and scaling up/out improved integrated TIPOs

Output 7: Impact of the R4D measured and future scenarios developed for the target vulnerable areas

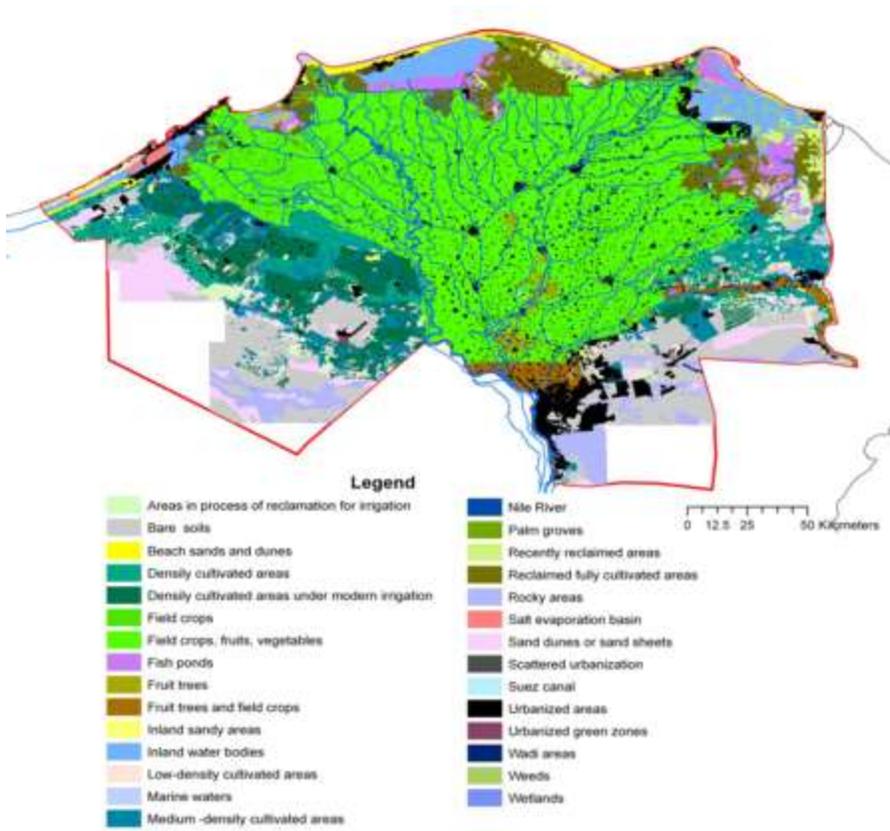
High potential areas

Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets

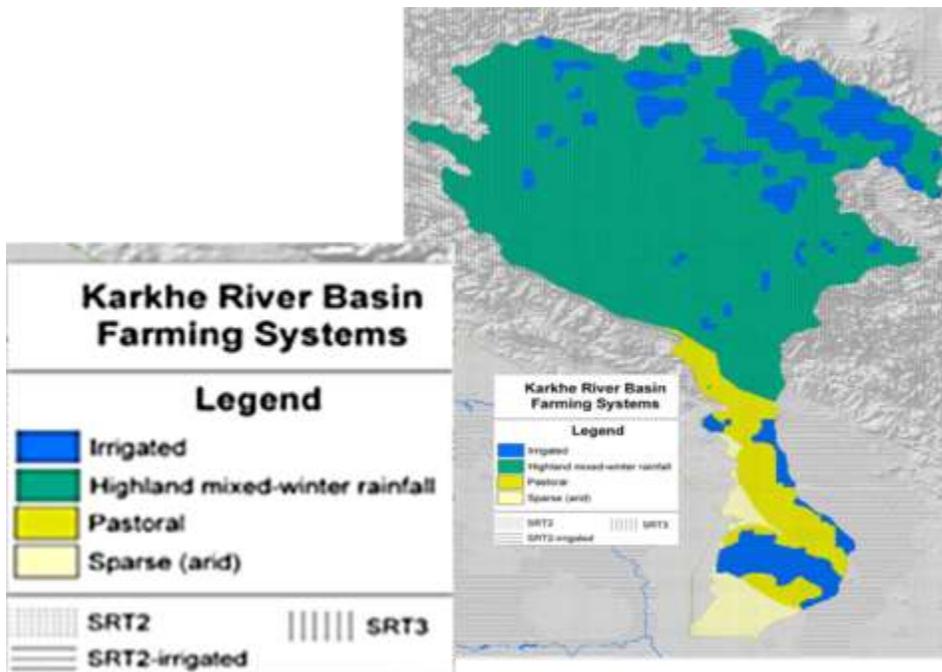
Meknès-Saïss (Morocco) Site



Egypt-Delta Site



Karkheh River Basin (Iran) Site



Constraints

- Production systems are under pressure to be efficient in order to compete with global players.
- Small farms cannot benefit from economies of scale such as effective mechanization, and lack opportunities of capitalization and access to input markets.
- Youngsters are increasingly looking for alternative opportunities in the cities where employment is scarce. The result is unbridled urbanization with slums and social unrest.
- Two-pronged approach: aggregate the smaller units while retaining the work force on the farms or develop alternative production systems that can be competitive on a world market through high-value crops or animal products.

Hypotheses

Hypothesis 1: Some form of farm aggregation (association/ organized farmers groups) will lead to the realization of economies of size, thereby leading to increased access to innovations, improved market efficiencies, competitiveness and value addition

Hypothesis 2: Rain fed wheat-based system can be sustainably intensified and diversified through crop-tree-livestock integration, agricultural innovations, and institutional arrangements providing pathways out of poverty

Hypothesis 3: Irrigated production systems can be sustainably intensified through policies and institutions that ensure efficient use of land and water resources.

Hypothesis 4: Use of innovation systems approach will enhance the adoption and utilization of improved technologies, markets and policies

Hypothesis 5: Equitable distribution of responsibilities and benefits along the value chain among men, women and youth will enhance development of the target areas;

Hypothesis 6: System analysis of production and market system performance will allow optimal intensification of the production and market systems and the assessment of potential impact of innovations both in socio-economic and ecological terms.

Hypothesis 7: Achieving gender equality will greatly contribute to the elimination of hunger and poverty through achieving equality between women and men in sustainable agricultural production and rural development efforts.

Outputs

Output 1: Innovation platforms for technology transfer, access to market, credit and insurance are developed and operational

Output 2: Rain fed mixed wheat-based system are profitably and sustainably intensified and diversified through integrated crop-vegetable-tree-livestock TIPOs in the action sites

Output 3: Irrigated production systems sustainably intensified by optimizing water and land productivity while conserving and valorizing natural resources (land, water, biodiversity)

Output 4: Harvest and post-harvest practices improved, and added-value options tested for better market access in the target sites

Output 5: Policy and institutional options related to farmers' aggregation, market and value chain integration, land fragmentation, water valuation and allocation evaluated

Output 6: Effective mechanisms for rural women and youth empowerment developed and tested, to equitably share benefits and responsibilities

Output 7: Models and knowledge management systems developed and applied for optimized systems design, and scaling up/out improved Integrated TIPOs

Output 8: Trade-offs between systems intensification, diversification and resource use and conservation analyzed and sustainability scenarios developed

Output 9: Impact of the R4D monitored and future scenarios developed for the target sites

Remarks and clarification

- The problem is not finding technical solution. Integrating urbanised systems such as policy and organization in the Nile are very important.
- Institutional and policy issues are major areas to be covered in the programme
- Integration of crops systems and structural components such as land, and policy are critical issues that should not be taken for granted.
- Integration is seen through modelling at different levels including socio-economic aspects as well.
- The component of climate change is missing. The growing season is decreasing due to climate change
- Need for more farmer organizations in the marginalized areas. In the arid areas, there are no organized farmers. Farmer organization is something that should be well integrated. The same applies to private sectors
- The private sectors will come in at the level of IPs. This will include several stakeholders in addition to the private sectors.

2.2.4 Central Asia

Presented by Dr Jozef Turok

Outcomes of inception phase

The Aral Sea Basin is among the most ancient centers of civilization

- Low rainfall, extreme rainfall variability, severe heat and cold
- Deserts, steppes and mountains
- Farming is the primary source of income in rural areas

- Agriculture employs between 20-50% of the population
- Farm privatization and land reform created a generation of farmers with limited access to technology, capital, modern inputs or traditional knowledge
- Climate change

Land and water degradation

- Soviet development plan increased the irrigated area causing irreversible damage in ecosystem degradation and water quality
- Salinity and waterlogging affect 90% of the lower Amudarya
- Old irrigation infrastructure and lack of water distribution planning
- Rampant pollution
- Low yields, low water productivity
- Low incomes

Existing partnership

- CGIAR Regional Program for Sustainable Agricultural Development in Central Asia and the Caucasus, hosted and led by ICARDA
- Strong partnerships with national research organizations, policy makers, universities, farmers' associations
- Operational since 1998
- Financing and governance by the participating Centers

www.icarda.cgiar.org/cac

- Policy linkages through the Central Asia and the Caucasus Association of Agricultural Research Institutions

www.cacaari.org

Past and current research: Improving water management

- Effects of agronomic and water management practices on water productivity
- Defining water management practices under water deficit conditions
- Research on saline and marginal quality water
- Trans-boundary water allocation research
- Modeling of groundwater quality and quantity

Irrigation is a key ingredient in successful agricultural production in CAC, but its management leaves room for improvement

From 2005 to 2011, the efforts of the project were focused on dissemination of the improved technologies aimed at the efficient use of irrigation water and increase in its productivity among farmers.

Germplasm enhancement and crop improvement

- Introduction and testing of improved germplasm to address production constraints
- High yield, quality traits and tolerance to drought, heat, salinity, pests and diseases (yellow rust in wheat)
- About 65 varieties released

Rehabilitation and Diversification

- Integrated use of marginal mineralized water and salt-affected soils for food-feed crops and forage legumes in the local, smallholder crop-livestock farming system
- Evaluation, domestication and large-scale use of halophytes and salt-tolerant crops such as sorghum and pearl millet

Promoting conservation agriculture

- First conservation tillage practices in Kazakhstan in the 1960s
- Now more than 1,600,000 ha under conservation agriculture mostly in rainfed North Kazakhstan
- Recognized in state policy with subsidies
- Research and demonstration efforts ongoing in irrigated areas in South Kazakhstan, Azerbaijan and Uzbekistan

Wheat yield response to planting method, two different farms in Azerbaijan (2011)				
Planting method	Wheat grain yield, t/ha		Saved water, %	
	Jumshudov	Babaev	Jumshudov	Babaev
Bed planted	5.37	4.53	36%	36%
Broadcasted	3.52	3.25		

The highest grain yield was recorded in Ehtibar Jumshudov's farm in bed-planted wheat while the lowest grain yield was recorded in Mehmon Babavev's field using the broadcasted planting method. According to the results obtained from the first project year, bed planting method improves yields, saves seed and water (an average of 36 % water).

Value-added processing of wool, mohair and cashmere

- Enhanced living standards of small-scale livestock producers and rural women
- Pilot sites in Kyrgyzstan and Tajikistan
- Set up value chains focused on fiber production, processing and marketing
- Community breeding of local goat and sheep populations

Research by partners: Agroforestry and afforestation of degraded lands

- Options for large-scale afforestation of degraded lands are available
- Multipurpose tree species with high adaptive potential, salt, drought and frost tolerance, and high utility value
- Re-introduction of desert and riparian trees and shrubs
- Rehabilitation and protection of natural wetlands

Capacity building

- Thirty training courses held annually
- Water User Associations
- 150 researchers received short and long term training
- More than 1000 people participated in farmers' field days, farmers' fairs, traveling workshops, farmers' schools and demonstration activities
- Dissemination through technical publications, exhibitions, presentations

DS CRP: What is new?

- Study and provide options for reducing vulnerability and managing risk in production systems characterized by land degradation, severe socio-economic conditions, health risks and no viable development alternatives
- Seek most effective ways of improving the competitiveness of small production systems
- Interdisciplinary approach combined with site-specific implementation plans
- Increased stakeholder participation for improving acceptability of research results
- Exploit synergy and complementarity among Centers, avoiding redundancy, contradictions and competition
- Capacity building
- Consider opportunities for women in these transitions

Interim Interdisciplinary Research Team

- Carlo Carli, CIP
- Mariya Glazirina, ICARDA
- Mohan Reddy Junna, IWMI
- Zakir Khalikulov, PFU-CGIAR/ICARDA
- Ravza Mavlyanova, AVRDC
- Ram Sharma, ICARDA
- Kristina Toderich, ICBA
- Muhabbat Turdieva, Bioversity
- Jozef Turok, PFU-CGIAR/ICARDA

- Kai Wegerich, IWMI
- Botir Dosov, Consultant

Selection of Action Sites

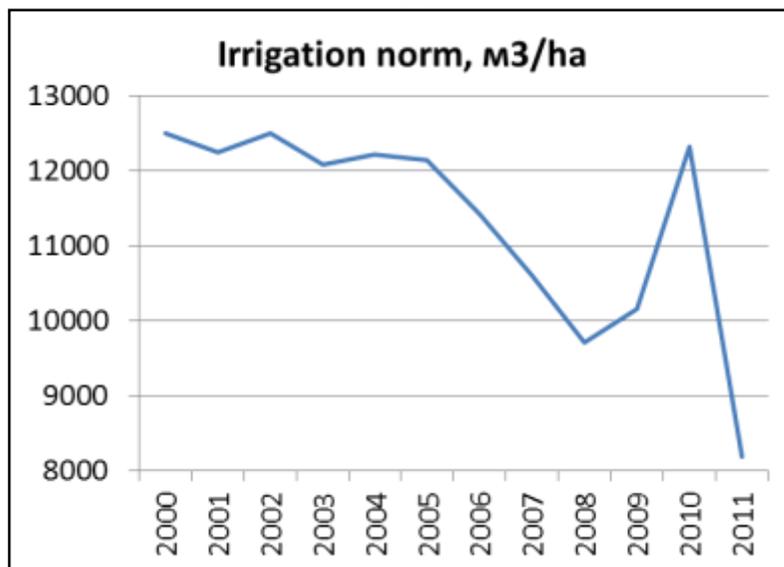
- Research and development partners from all the countries were fully involved
- Two Action Sites were selected for SRT2 because these are two distinct landscapes:
 - Aral Sea Region (KZ, TK, UZ)
 - Rasht and Kyzyl-Suu Valley (TJ, KG)
- Actual research site(s) will be much smaller

Selection of Action Sites

- One Action Site was selected for SRT3
 - Fergana Valley (KG, TJ, UZ)
- Satellite Sites in Kaska Darya Province, UZ (livestock and salinity issues); Kura-Araks River Basin in Azerbaijan (the Caucasus)
- Broad and representative diversity; relevance for out-scaling
- Gradients within Sites

SRT3 Site Characterization: Fergana Valley

- Water is available, salinity problems not widely occurring
- 'Food basket' of Central Asia, particularly for fruits and vegetables
- Increased population pressure and urbanization -> reduced irrigated area
- Depleted soils due to monoculture, degraded pasture lands
- New class of farmers, lacking agricultural extension
- Presence of Institutions
- Good market infrastructure



Research Hypotheses

- For each SRT, about 7 to 8 Hypotheses were developed based upon the site specific issues that were identified, these were circulated to about 100 scientists and development partners in the Region for their feedback
- Mid-June 2012, at Regional Inception Workshop, these Research Hypotheses were further debated and refined, and a set of action research topics were developed. Too many to mention here.
- Comprehensive characterization of Action Sites through 13 information sources, some field verification of data (information available in English and in Russian)
- Development and adoption of an **innovative knowledge platform** for integrated land conservation, watersheds management **will lead to improved institutional functioning and responses** in addressing agricultural constraints for rangelands and irrigated agriculture
- **Improved integrated water and land resources management, increased diversity portfolio** (including neglected and underutilized species) adapted to soil salinity in target cotton-wheat-rice-livestock production system **will increase soil and environmental health, sustainable agriculture productivity**, improve diets and food nutrition, and increase employment in the Aral Sea Region
- **Increased diversification** of the mixed production system integrating horticulture, agro-forestry, value addition and market access **will enhance water productivity, human nutrition and livelihoods** of rural women and men, thus increasing employment in Rasht Valley and in neighboring areas
- Innovative and combined policy, institutional and technological **approaches to optimize water productivity and equitable allocation will lead to sustainable intensification of the cotton-wheat-livestock** production system in Fergana Valley.

Linkages with other CRPs in Central Asia

- Wheat
- Roots and Tubers
- Water, Land and Ecosystems:
 - Irrigated Systems
 - Improved Management of Water Resources in Major Agricultural River Basins
- Forests and Trees: Sentinel landscape focusing on forest biodiversity conservation

2.2.5 South Asia

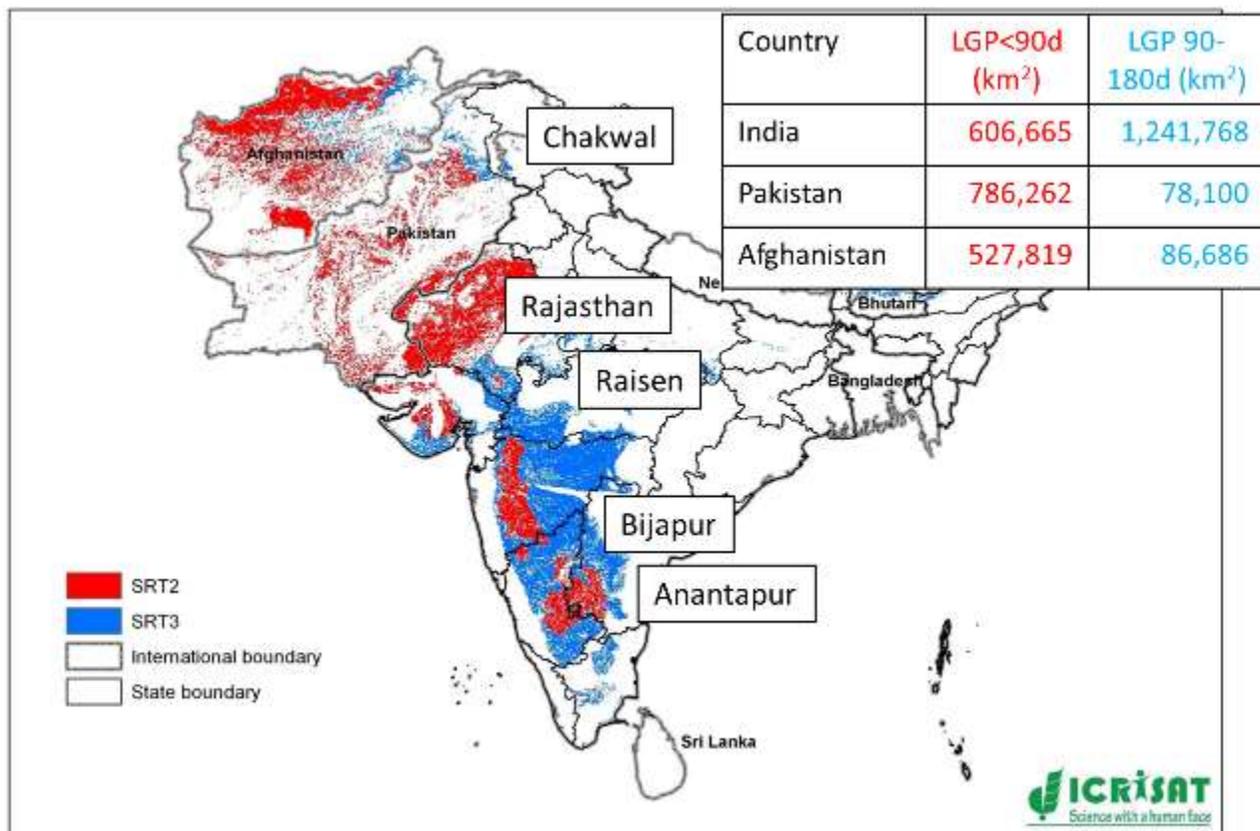
Presented by Dr Peter Craufurd

Inception phase

- Identifying key partners
- Analysis macro-level data

- Regional workshops to identify:
 - Sites and priority production & livelihood systems
 - Observed changes in systems
 - Major drivers of change & future trajectories of change
 - Research hypotheses and activities
- Initiation baseline data collection

Action sites/target research areas



Rationale for Action Site selection

- Extensive & intensive crop-livestock & livestock systems
- Black & red soil systems
- Rainfed, stored soil moisture & irrigated systems
- Areas highly vulnerable to natural resource degradation
- Areas undergoing rapid change (e.g. migration, non-farm employment)
- Areas with poor livelihood indices
- Country/policy comparisons

Partners

- Regional coordinator: ICRISAT
- CGIAR partners: Bioversity, CIP, ICARDA, ICRAF, ILRI, IWMI
- NARS partners: Indian Council Agricultural Research (ICAR), Indian Agricultural Ministries, Pakistan Agricultural Research Council (PARC), Ministry of Agriculture (Afghanistan)
- Agricultural Universities: University of Agricultural Sciences, Karnataka; Acharya NG Ranga Agricultural University, Andhra Pradesh
- National & State-based NGOs: BAIF, GRAVIS

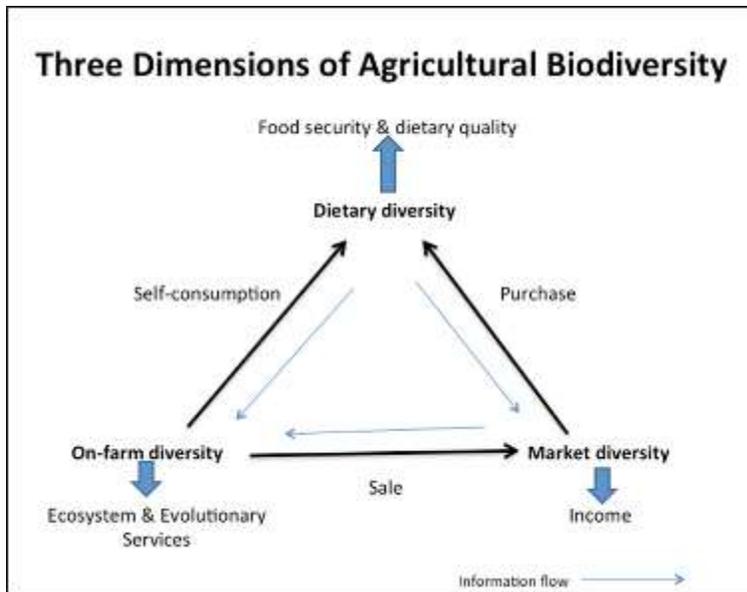
Key research areas

Mapping of land-use change & biomass assessment via remote-sensing & physical measurement

Land use change (ha)	Jaisalmer
Others/Rangelands to Rainfed-single crop (SC)	110,900
Others/Rangelands to Irrigated-SC/double crop (DC)	2,394
Rainfed-SC to Irrigated-SC/DC	95,331
Rainfed-SC to others	25,175

Agro-Biodiversity assessment

- Agro-biodiversity survey tool developed
- Surveys planned in Rajasthan, Bijapur & Anantapur in 2013



Household livelihood, technology adoption & vulnerability analyses

- >15 villages representing different production systems identified
- Baseline data from ~1000 households collected
- Data will be analysed to characterise communities & to help target research

Gender & climate change

Joint activity with CGIAR Climate

Change program (CAAFS)

- Setting up climate-smart villages in Bijapur & Anantapur
- Identifying role of social institutions, social capital and social networks in adaptation processes & practices
- Mobilizing & supporting building social capital
- Identifying technologies that are gender-friendly

Technology & policy options

- Identifying technologies & policies that have worked in Action Sites with partners
- Use models to assess potential value/benefits/trade-offs of interventions
- With partners, testing & scaling-up and out of technologies, e.g.
 - Soil-test based nutrient application & improved cultivars
 - Agricultural water management
 - Improved livestock feeding system

Institutional innovation & change

Scaling up 'Bhoochetana' in Karnataka, India

Component	2009-10	2012 Kharif
Area (m ha)	0.2	3.73
No. of Villages	1,440	26,293
No. of farmers (millions)	0.2	4.39
No. of farmer facilitators	517	9,700
No. of lead farmers	1,867	45,000

Remarks and clarification

- It is important to look for more opportunities to include the whole of South Asia

Question: Does impact pathways includes the development partners along the entire impact pathway.

Response: CRPs integrates new research and existing research.

2.3 Work plans and Cross-Cutting themes

2.3.1 Harmonization across Regions

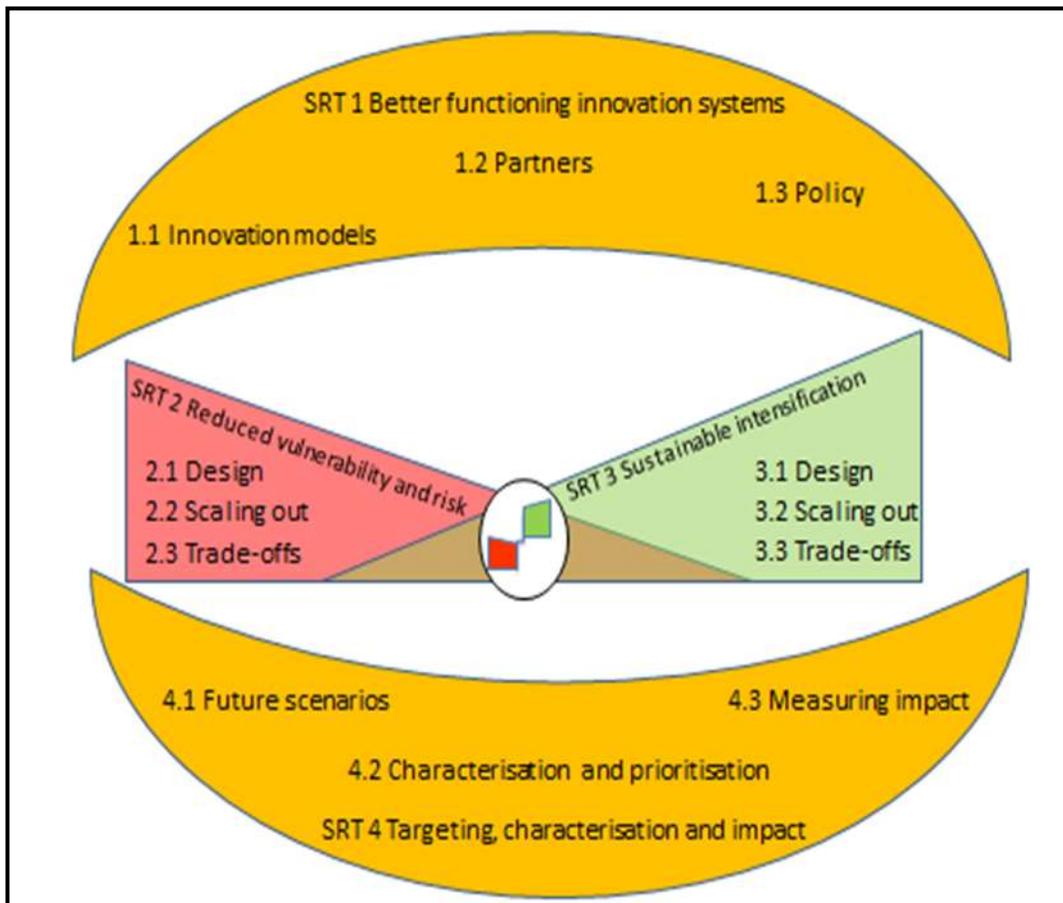
Presented by Dr. William Payne

Fostering a global-scale research program through Common Themes, Methodologies, and Research Tools

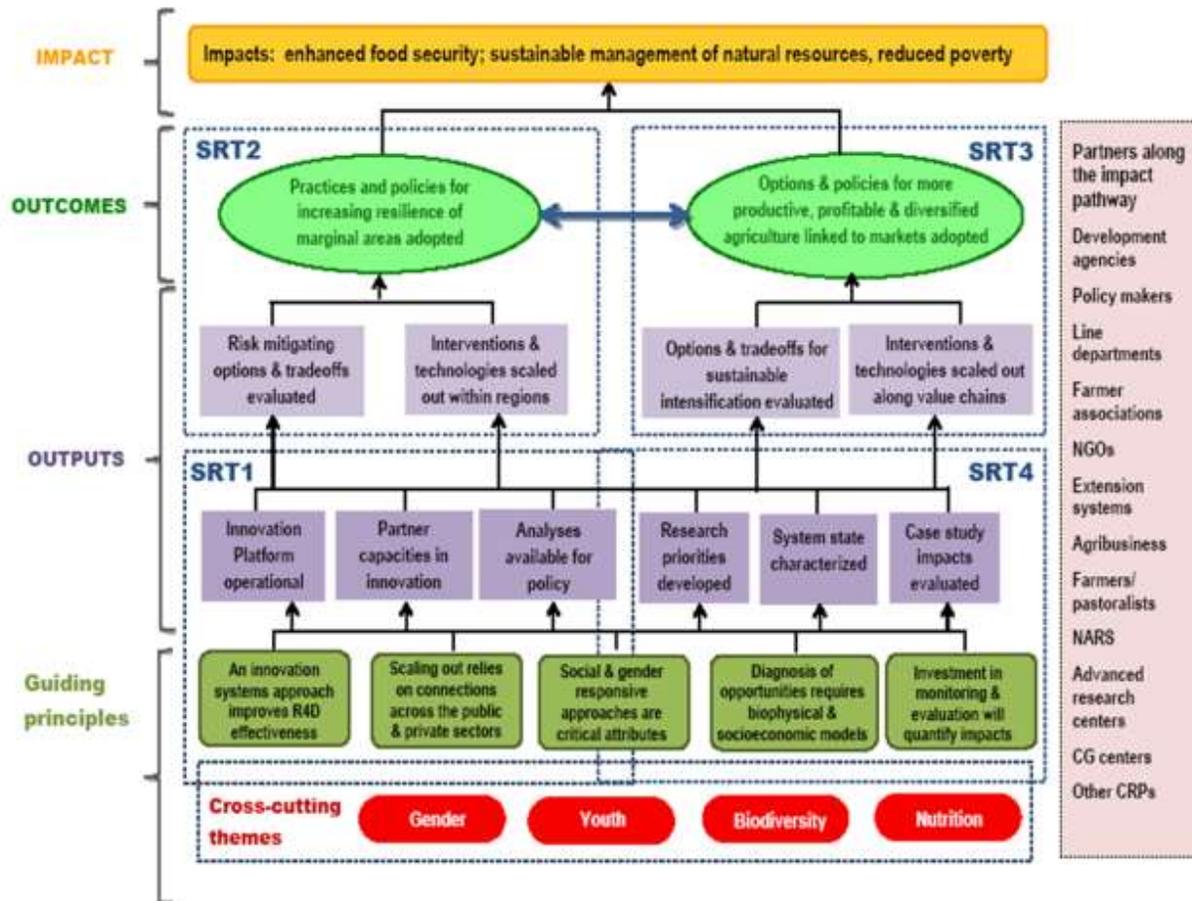
Conceptual Research Framework

SRT2: Reducing vulnerability and managing risk

SRT3: Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets



Strategic Research Theme	Output
<ul style="list-style-type: none"> • Approaches and models for strengthening innovation systems, building stakeholder innovation capacity, and linking knowledge to policy action 	Approaches and models for strengthening innovation systems, building stakeholder innovation capacity, and linking knowledge to policy action
	Enhanced capacity for innovation and effective participation in collaborative “IAR4D” processes
	Strategies for effectively linking research to policy action in a dryland context.
<ul style="list-style-type: none"> • Reducing vulnerability and managing risk through increased resilience 	Combinations of institutional, biophysical and management options for reducing vulnerability designed and developed
	Options for reducing vulnerability and mitigating risk scaled-up and -out within regions
	Trade-offs amongst options for reducing vulnerability and mitigating risk analyzed (within regions). Knowledge-based systems developed for customizing options to sites and circumstances
<ul style="list-style-type: none"> • Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets 	Sustainable intensification options designed and developed
	Sustainable intensification options out-scaled
	Trade-offs amongst sustainable intensification and diversification options analyzed and knowledge-based systems developed for customizing options to sites and circumstances
<ul style="list-style-type: none"> • Measuring impacts and cross-regional synthesis 	Future scenarios and priority setting
	Livelihood and ecosystem characterization.
	Across-region synthesis of lessons learnt from SRTs 2 and 3
	Program impacts measured.



Inception Phase

- Groundwork for baseline characterization
- Workshops to set Research Priorities

“Simplified Standardized Logframe” Example from W. Africa (7 pages long)

Many activities identified but:

- No budget
- No obvious links to “SRO x Center” budgets
- Unclear impact pathway
- No inter-regional harmony
- No global program
- “Cracks”

Dryland Systems Launch Workshop, 21-23, May 2013

West Africa Sahel and Dryland Savannas				
SRT	SRT Outputs	Outputs	Activities	Site
2, 4	2.1, 4.2	Output 1.1 Best fit crop/livestock/trees management practices for addressing feed gaps and system productivity identified and documented	Activity 1.1.1 Identify, and document the performance of existing and alternative crop/livestock/trees management practices for enhancing food and feed security	SRT2
2,4	2.1, 2.3, 4.2, 4.3		Activity 1.1.2 Characterize and simulate livestock mediated nutrient flows at landscape level	SRT2
1,2	1.2,2.1,2.2		Activity 1.1.3 Develop and promote improved crop/livestock/trees management practices to reduce feed gaps for livestock	SRT2
4	4.4	Output 1.2 Costs, benefits and tradeoffs of the proposed integrated management practices assessed	Activity 1.2.1 Analyze the economic profitability of the improved crop/livestock/trees management practices for enhancing food and feed security	SRT2
SRT	SRT Outputs	Outputs	Activities	Site
1,2,3,4	1.2, 2.1, 3.1, 3, 4.2	Output 2.1 Best practices for increasing biomass production that will result to increased soil organic matter, water holding capacity and nutrients availability developed and disseminated	Activity 2.1.1. Assess and monitor the effect of management practices on whole landscape biomass productivity	SRT2, SRT3
1,2,3	1.2, 2.2,3.2		Activity 2.1.2 Develop and disseminate best practices for increasing biomass productivity	SRT2, SRT3
2, 3	2.1, 3.1	Output 2.2 Options for increasing organic matters through effective use of trees, cover crops, crop residues and animal manure developed and promoted	Activity 2.2.1 Quantify the effects of management practices on nutrient fluxes at the farm scale	SRT2, SRT3

Danger of Laisser Faire

- Uncoordinated Research among Centers or Regions
- Marginalization of Regional Coordinators
- Lack of Programmatic coherence

- Challenge of reporting on program level using disparate center or regional approaches with no real data management, common methodologies or experimental design
- A missed opportunity for some great systems work
- Less scientific and therefore development impact

Common «SRT1» Outcomes

- Improved access to and adoption of appropriate technology and technical advice by smallholder farmers
- Higher levels of empowerment for youth and women in community decision-making
- Stronger institutions to serve the rural poor and greater government awareness about system and livelihood interdependencies, leading to more-effective policy changes and institutional innovations
- Broad stakeholder participation in the research and development cycle through innovation platforms

Common «SRT2 and 3» Outcomes

- Higher plant and livestock productivity and profitability
- Improved rural employment
- Greater biomass availability for animal and cropping systems
- Better access to markets and financial services by farmers
- High-value product markets made accessible to farmers
- More-effective buffering and system resilience to reduce vulnerability to system shocks and climate change
- Increased food security, including better nutrition
- Higher levels of biodiversity and lower levels of land degradation through better management of soil, water, and genetic resources
- Farmers manage natural resources more sustainably; and
- Improved postharvest and processing technologies communicated and value-adding options increased

Common «SRT4» Outcomes

- A widely agreed upon framework to define and measure vulnerability for the purpose of informing policy and programming
- Trade-off analyses to establish the optimal mix of land use/land cover and cropping systems
- Dryland Systems CRP to inform other CRPs, and vice versa
- Improved options for mixed production systems are communicated to smallholder farmers.
- Better understanding of system characteristics, opportunities, and constraints
- Effective communication of CRP findings to all stakeholders

Cross-cutting Themes and Programmatic Tools

- Monitoring and Evaluation for Impact Pathways
- Gender
- Youth
- Capacity Development
- Modeling
- Communication, Information Management and Knowledge Sharing
- Geoinformatics
- Research Support Systems

Strategies and White Papers

- **Strategies**
 - Gender
 - Capacity Building
- **White Papers**
 - Modeling
 - Land degradation
 - “Sustainable Intensification”

Models to Synthesize and Test Knowledge

Dryland Systems CRP aims at agro-ecosystems where:

1. systems are highly vulnerableincrease resilience to shocks (SRT2)
2. systems where sustainable intensification options are available (SRT3)

Mixed (crop-livestock) farming systems are dominant and therefore key tradeoffs at field/farm level are enterprise selection/labor/residues/erosion/investment

Tools available (defined largely by the interested partners):

- Pasture-tree-crop-soil modeling (CSIRO, APSRU group, Australia)
- Whole farm/watershed management (Texas A&M, USA)
- Animal (CIRAD) and whole farm to regional economic modeling (IHEAM-Montpellier)
- Underpinned by efforts to develop research methods support (Reading University)

2.3.2 Gender Research in Dryland Systems

Presented by Dr Malika Martini

Rationale for gender in the CGIAR Strategic Results Framework

Research

- If gender disparities in the adoption of new technologies, resource management practices and marketing opportunities are reduced, income and assets for women producers will increase
- Productivity increases if > means in the hands of women
- Improved nutritional status of women and children will lead to reduced inter-generational transmission of poverty

The workplace

- Gender Staffing, G&D

Gender in the CGIAR

Objective

- To improve the relevance of the CGIAR's research to poor women as well as men (reduced poverty and hunger, improved health and env. resilience) in all the geographical areas where the work is implemented and targeted
- By 2015 progress towards these outcomes will be measurable

Gender Strategy for Dryland Systems

Integrating Gender into the Program Cycle (Assessment, Strategic Planning, Design, M&E)

A Process

- Gender in CGIAR Research Programs (CRPs)
 - Implementation of the Consortium- level Gender Strategy
- Mainstreaming
 - Gender Strategy required from each CRP
 - Gender budgeting in CRPs
- Gender Budgeting Issues
 - Strategic research costs are clear
 - Integration of gender as an add-on will be difficult to cost
 - Monitoring performance will be critical

Ours should be ready 6 months after the Inception Workshop (May 2013)-Nov. 2013?

Develop indicators to track technologies assessed by gender, diff. acceptability (Gender Expert(s) and biophysical scientists to work together)

How to do it?

- Focus group meetings with line managers of CRPs
- Stakeholder working group
- Designate a member of the CRP Board to oversee the progress of the strategy and its implementation (budget)
- Discuss how to integrate gender into 2014 workplans
- New proposal development (criteria for gender consideration for acceptance)

Components of the strategy

1. Justification and rationale
2. Gender versus CRP 1.1 objectives
3. Goals and objectives (res. Questions, impact pathways)
4. Impact pathways (gender and IP)
5. Activities (Approaches, methods [GA, GR],
Gender in the res. cycle (targeting & priority setting, research)
Themes- integrating gender
6. Capacities for gender analysis and gender research
7. Monitoring and evaluation & Impact assessment
8. Budget for gender activities
9. Management system

Management System

- This will be used by the CRP to ensure that responsibilities performed (to senior levels) with clear accountability
- The team accountable for these responsibilities should be described
- Mechanisms for managing shared gender expertise with other CRPs or partners will be defined/explained
- The GS will synthesize the gender-responsive goals and objectives, &
- Show how management roles and responsibilities will ensure the proposed work will be organized and managed to achieve these goals

The bottom line is:

- The management is responsible about the implementation of the gender strategy – gender research mainstream
- Line managers are responsible about the conception and implementation of the gender strategy.

- Ex. Individual performance assessment includes gender mainstreaming into their respective work
- The strategy should present the management system with which the CRP will ensure that responsibilities for planning, implementing, monitoring and reporting the work presented in the Gender Strategy are performed (to senior levels) with clear accountability
- The team accountable for these responsibilities should be described.
- Mechanisms for managing shared gender expertise with other CRPs or partners should be explained. This section should include a synthesis of gender-responsive goals and objectives, showing how management roles and responsibilities will ensure the proposed work will be organized and managed to achieve these.

Performance Monitoring

- CRP annual reports are to select a set of outcome indicators, (including gender-responsive outcome indicators), for reporting at baseline and on subsequent progress
- CRP Gender Strategy has process indicators and M&E
- Gender Budgeting based on good reporting on gender indicators

Dryland System Program

<ul style="list-style-type: none"> ● SRT1: Approaches and models for strengthening innovation systems, building stakeholder innovation capacity, and linking knowledge to policy action 	<ul style="list-style-type: none"> ● Gender disaggregated data and information. Integration of G into modeling when needed. Mainstream to get measurable outputs
<ul style="list-style-type: none"> ● SRT2: Reducing vulnerability and managing risk 	<ul style="list-style-type: none"> ● Vulnerability affects women and men differently, ≠constraints, exposure to risks (crops, livestock, water, testing & evaluation.)
<ul style="list-style-type: none"> ● SRT3: Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets 	<ul style="list-style-type: none"> ● Women and men have different roles in crops and livestock production, value chains, market access etc.
<ul style="list-style-type: none"> ● SRT4: Measuring impacts and cross-regional synthesis 	<ul style="list-style-type: none"> ● Impact may be different or the same on women and men, needs assessment

Gender Indicators on which the CRP scientists will be assessed

No	Gender responsive indicator	Example
2	% of flagship products produced that have <u>explicit target of women farmers/NRM managers</u>	70%
3	Percent of flagship products produced that have been <u>assessed for likely gender-disaggregated impact</u>	60%
5	% of tools that have an <u>explicit target of women farmers</u>	72
6	% of tools assessed for likely <u>gender-disaggregated impact</u>	72
19	% of <u>technologies</u> under research that have an <u>explicit target of women farmers</u>	29
20	% of <u>technologies</u> under research that have been assessed for likely <u>gender-disaggregated impact</u>	12
22	<u>Number of people who will potentially benefit from plans, once finalized, for the scaling up of strategies (sex disaggregated)</u>	Na
25	% of <u>above innovations/approaches/options</u> that are targeted at <u>decreasing inequality between men and women</u>	Na
34	<u>Number of farmers and others</u> who have applied new technologies or management practices as a result of CRP research	26,105 of which 1,853 are women

Gender Gap (FAO 2010)

Inequalities between women and men producers will:

- Hold back agricultural productivity (yield gaps of 20-25%)
- Perpetuate poverty and unsustainable resource use
- Make women more vulnerable to climate-change impacts on agriculture
- Are obstacles to the CGIAR achieving its strategic results

Gender Audit

Objective

- Gender Audit: identify, analyze strengths, good practices, weaknesses, gaps and challenges for gender mainstreaming in research and Org.
- It is a process for creating ongoing gender action planning, and to identify challenges and opportunities for increasing gender skills and organizational quality

Steps

- Prepare the organization for GA
- Survey introduced to staff
- Focus groups: to develop vision of gender equality
- Create an action-plan

2.3.3 Supporting the YOUTH in CRP1.1 to achieve impact

Presented by Dr. Marina Cherbonnier

Young Professionals' Platform for Agricultural Research for Development

What is YPARD?

- International movement
- YPs under 40
- Active in Agricultural Dev.
- Multi-stakeholders
- Network of regional offices and country representatives

Because youth need

- To get involved
- To access Professional opportunities
- To be given a voice
- Sustainable ARD = their future!

Objectives

- Exchanging information & Connecting people
- Contributing to strategic ARD policy debates
- Promoting agriculture among young people
- Facilitating access to resources and capacity building opportunities

Youth specific needs

- Disenfranchisement of Youth in the dryland areas =
- Lack of:
 - Political power and decision making
 - Access to finance and markets
 - Supportive institutions and policies
 - Social inequity

Why a Youth focus in the CRP?

- Policies, institutions and technology's access for **Youth** empowerment

- **Sustainability** through social equity (Payne) and work with leaders of today and tomorrow
- **Research** -> best practices for sustainable livelihoods
- Address the causes of youth **migration** and **unemployment** – retain youth in rural areas and get them to **contribute to** the well-being of their **community**

Youth empowerment in Dryland systems

Strengthening their

- “ability to learn and make **decisions** based on adequately **contextualized** knowledge”
- **Leadership** skills to overcome the **complexity of dryland systems** in its whole

How to empower the youth?

- Conducting Youth targeted **research** (age-disaggregated data)
- Providing **Capacity building** opportunities
- **Involving youth in Policy debates** and decisions
- **Mentoring** – Policy level and beyond
- Making sure to address **young women** issues through the gender-focused activities planned
- Be **context-specific** and valorise **collaborative action**

Youth component in the SRTs

- SRT 1 – Youth as explicit stakeholder in the innovation platform, notably as a voice of the youth on policy level
- SRT2 – Addressing youths’ specific vulnerabilities and risks – finance, land, capacity building opportunities
- SRT3 – Capacity building & employment – entrepreneurship, innovation and productivity for sustainable intensification
- SRT4 – Youth to enhance cross-regional information sharing via ICT4D

Key points for Youth empowerment

- **Age disaggregated data** (research)
- **Mentoring** senior/junior partnerships
- Assessing the **capacity needs** of YPs **locally**
- Involving YPARD/**youth** representatives in country **strategic teams**
- Engaging **youth as an explicit stakeholder** representing different groups of stakeholders

2.3.4 Developing pathway to Impact for Dryland systems CRP

Presented by Dr Aden Aw-Hassan

Why impact pathway?

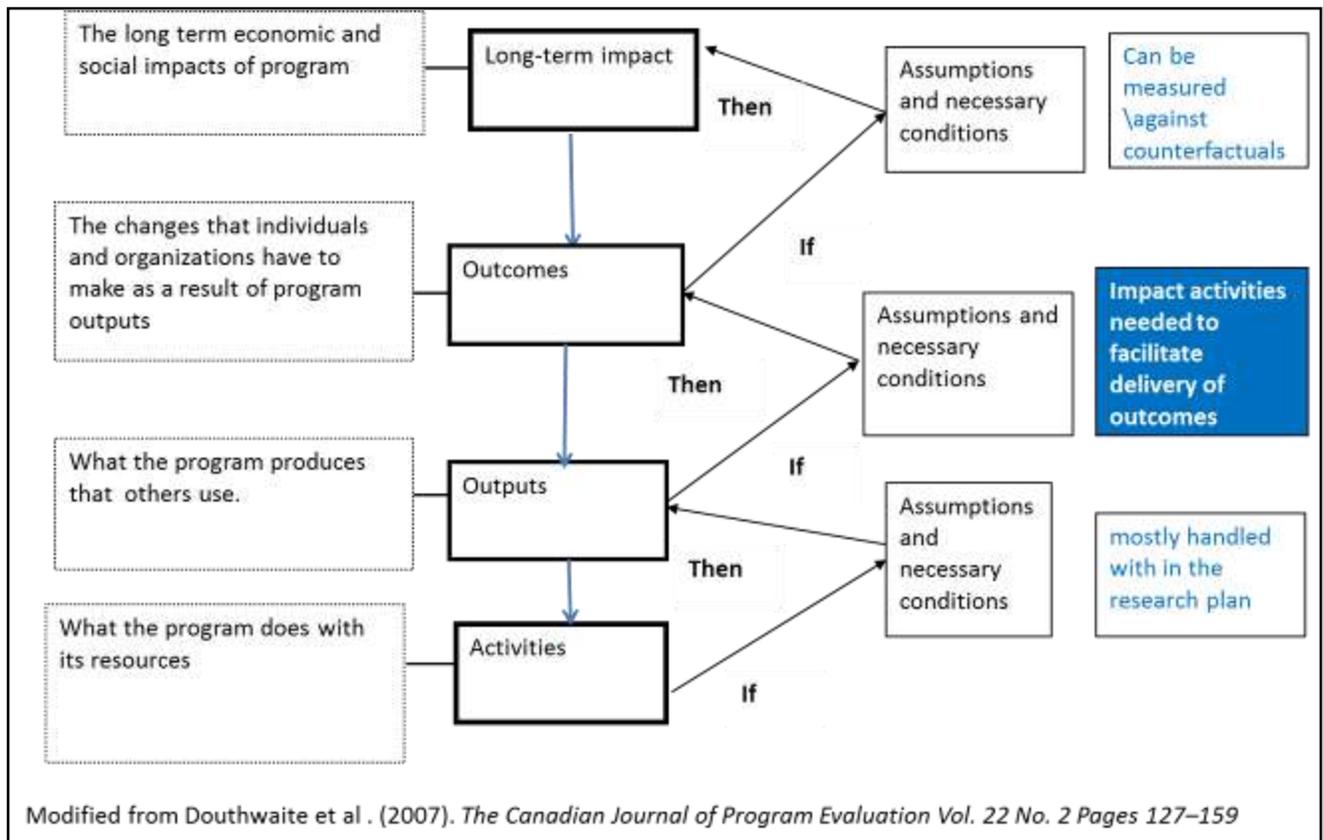
- “impact-oriented,” also called “ results-oriented” program means the performance of the program is being evaluated not just on the delivery of research outputs, but on how those outputs are used, by whom, and to what effect (Ryder-Smith, 2002).
- This has been the main driver of the change process

Note:

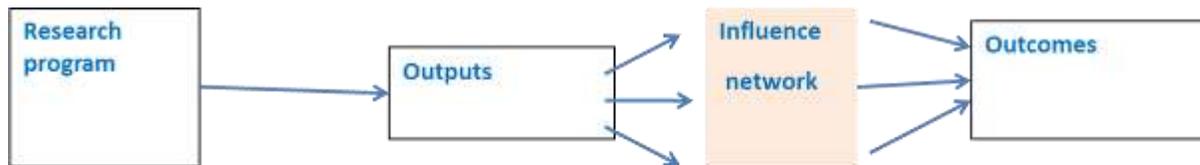
- How outputs are used (change of practices?)
- Who used (beneficiaries, users)?
- To what effects (impacts)?



Impact pathway



Sources of influence?



- Leaving to chance- good luck
- Planning and working to influence

Impact pathway in the M&E process

Agricultural development is fundamentally a social process in which people construct solutions to their problems by:

- Modifying both new technologies and
- Their own production systems

Hence, agricultural change is an immensely complex process, with a high degree of non-linearity.

The impact evaluation can be seen in two stages.

In the first stage:

- The research project develops an impact pathway for itself, which is an explicit theory or model of how the project sees itself achieving impact.
- The project then uses the impact-pathway to guide project management in complex environments.
- Establish baseline for factors aiming to change.

The second stage:

- Conduct an ex post impact assessment sometime after the project has finished:
- Here the project's wider benefits are independently assessed.
- The evaluator seeks to establish plausible links between the project outputs and developmental changes, such as poverty alleviation.

Boru Douthwaite, Thomas Kuby, Elske van de Fliert, Steffen Schulz. **Impact pathway evaluation: an approach for achieving and attributing impact in complex systems.** *Agricultural Systems*, [Volume 78, Issue 2](#), November 2003, Pages 243–265.

Do not expect researchers to be able to predict the impact of research.

The purpose of Pathways to Impact is to encourage “researchers” to explore, from the outset, who could potentially benefit from their work in the longer term, and consider **what could be done to increase the chances of their research reaching those beneficiaries**; to **explore the pathways for realizing the impact.**

6 basic points to develop Impact pathway:

Impact Summary:

1. *Who* might benefit from the research?
2. *How* might they benefit?

Pathways to Impact:

3. *What* will be done to ensure that potential beneficiaries have the opportunity to benefit?

Network of influence:

4. *Who* (individuals, organizations) has influence on bringing the outcomes necessary for the expected impacts?
5. *How* will the project engage these key individuals and organizations to bring these outcomes/ changes?
6. At what stage with the program (project) engage these key players? (Timing?)

Types of Impact Activities

Impact activities are those designed specifically to engage users and other actors (stakeholders/partners) who have influence on the change process, in order to increase the chances of users benefiting from the research outputs.

Some examples of impact activities:

(1) Engagement with beneficiaries

- Specify what engagement or collaborative partnership are or will be in place to facilitate the outreach and potential up-take of the research e.g. to shape policy and practices?
- How will the activities target specific groups:
 - Gender considerations
 - Smallholder producers
 - Pastoralists
- Outputs and contribution to potential impacts be identified?

(2) Communication:

Describe the communications and engagement activities with the identified beneficiaries that will be undertaken, for example:

- Secondments of research or user community staff;
- Events aimed at a target audience;
- Workshops to provide training or information dissemination;
- Publications and publicity materials summarizing main outputs in a way that beneficiaries will be able to understand and use;
- Websites and interactive media;
- Media relations;
- Public engagement; and
- Public affairs activities.

Key questions

- How have beneficiaries been engaged to date, and how will they be engaged moving forward?
- How will the work build on existing links or create new links?
- Outline activities to work with intermediary organizations or networks; for example private sector (manufacturers of machinery, seed companies, input suppliers, credit providers?)

(3) Collaboration:

- Explain how collaborations and partnerships within the proposed research program will be managed and will form part of the pathway towards economic and societal impacts,
- Include :
 - Roles and responsibilities of all parties in relation to impact;
 - Nature of the relationships – e.g. Established or newly formed;
 - Nature, value and significance of any contributions to the proposed project; and
 - Details of any formal collaboration agreements or future plans for collaboration agreements.
- Explain how have the beneficiaries been involved with the design of the research to maximize the potential up-take and application of the research?

Capacity

- Explain who will undertake the impact activities, for example: specialized staff employed to undertake:
 - Facilitation,
 - Interactive workshops,
 - Communication and promotional activities; and
 - Technical experts to write publications, web pages and user-friendly interfaces.
- Describe whether the program has that capacity and, if to be acquired, how that will be done and when?

Milestones of Impact Deliverables

- Include timescales for delivering the impact activities set out within your Pathways to Impact.
- Describe the key milestones during the project and ways to measure the success of the impact activities.

For example:

- Monitoring and evaluating the Pathways to Impact every fixed period (annual basis),
- Advisory groups to shape future activities,
- Using questionnaires, stakeholder surveys,
- Collecting website statistics and
- Impact activity data and/or conducting exit polls at the end of key activities to determine if the needs of user communities have been met.

TOR for the Impact Pathway group

1. **Beneficiaries:** Identify who would benefit from research (who will use research outputs) and how?
2. **Construct influence network:**
Identify the key players (organizations, government departments & programs, universities, NGOs, policy makers, media organizations, community organizations, trade-unions, cooperatives, women's groups, private sector-input suppliers, traders, credit providers, insurance companies) that can facilitate (have influence on) the delivery of program outcomes or are users of program outputs of the program.
3. **Impact activities:** Identify impact activities that will allow to engage these selected players and describe how that engagement will be implemented and when that will be conducted along the project cycle
4. **Link these impact activities to the program outcomes:** describe how that these impact activities are expected to achieve (these should be those in the log-frame) and the timing of these outcomes.
5. **Capacity:** Identify what capacity the program should acquire to ensure that these are implemented effectively and efficiently.

Remarks and clarifications

- The impact pathway should be inclusive of governments
- The commercial feasibility of a project should be effective enough to attract investors who can put money to scale out.
- Research needs to be tailor made based on the needs of the end-beneficiaries
- The environmental and land degradation components should work toward bridging the gap between the impact and the outcome.

Question:

- Youth involvement is important in all the CRP. How then can the youth be motivated to get involved in agricultural development? Youth are not motivated to engage or get involved in agriculture. For example the rate of unemployment in Spain is 57%. How then can we convince the youth to engage in agriculture especially in production? Agri-industry or commodity chain could be an incentive to close the gap. How to retain the young people in the rural areas is another big challenge.

Response:

- Partnerships with CSO and other partners will help enhance understanding of the social systems
- Transformative research is the vehicle to creating impacts
- Researchers should acknowledge the possibility of having research questions that researchers may not answer and may need other development partners to answers.
- Youth wants to be creative. They do not want to be boxed down in production. Thus the need to define innovative ways of attracting the youth in agricultural development.

2.3.5 Dryland Systems & Capacity Strengthening

Presented by Dr Iman El-Kaffass

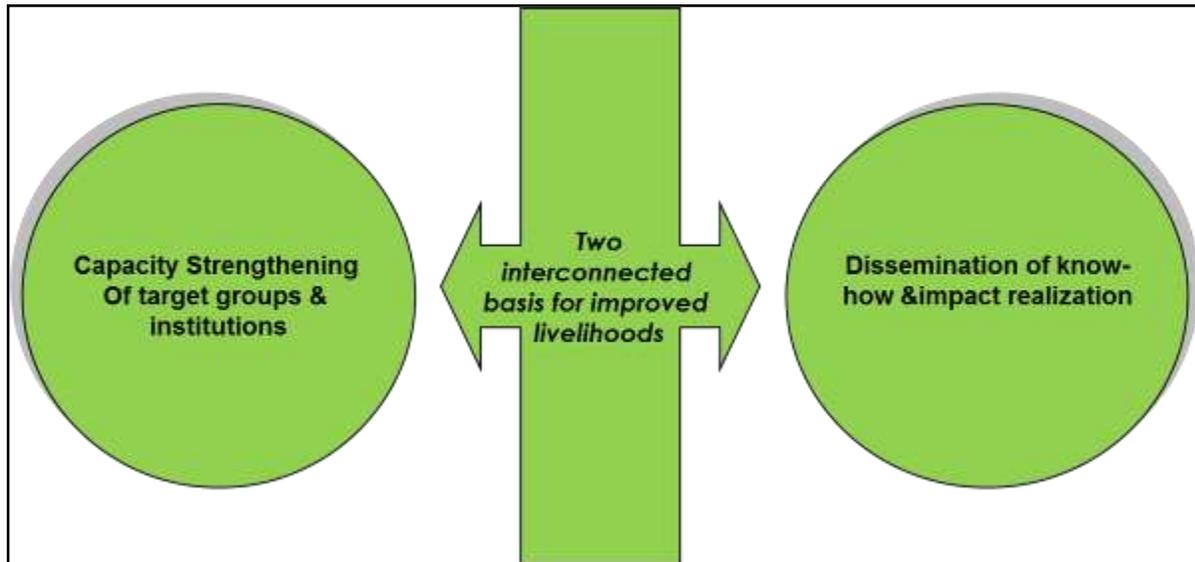
Dryland Systems Program

- Why is it important to talk about capacity strengthening?
- Dryland Systems Program aims to improve food security and generate **higher and more secure incomes for 87 million** people over 15 years. It aims to raise the productive capacity of natural resources & **reduce degradation across 11 billion hectares**.

Dryland Systems & Capacity Development

- The realization of the planned sustainable development and impact on the ground depends, among other elements, on the capacity strengthening of benefitting institutions and individuals.
- Capacity strengthening of target groups and institutions is essential to ensure the transfer and adoption of knowledge and of proven technologies
- Thus, the program will fully integrate capacity strengthening into its activities, leading to the realization of its goals.

Transfer of know-how and impact realization need capacity strengthening of involved actors



Target Groups and Institutions

- National Agricultural Research Centers
- Extension systems/agencies
- Policy development systems
- University staff & students
- Civil society organizations/ rural communities/farmer associations/farmers
- Focus on youth and female beneficiaries/women groups
- Multi-stakeholder initiatives to be encouraged (more than one group of beneficiaries)

Partners

- CGIAR Centers
- National Agricultural Research Systems (NARS)
- Advanced Research Institutes (ARIs)
- Universities
- Development Partners
- Civil Society
- Private Sector
- Farmer organizations & Women Groups

Regional Targets

- West Africa Sahel and Dry Savannas
- East and Southern Africa
- North Africa and West Asia
- Central Asia and Caucasus
- South Asia

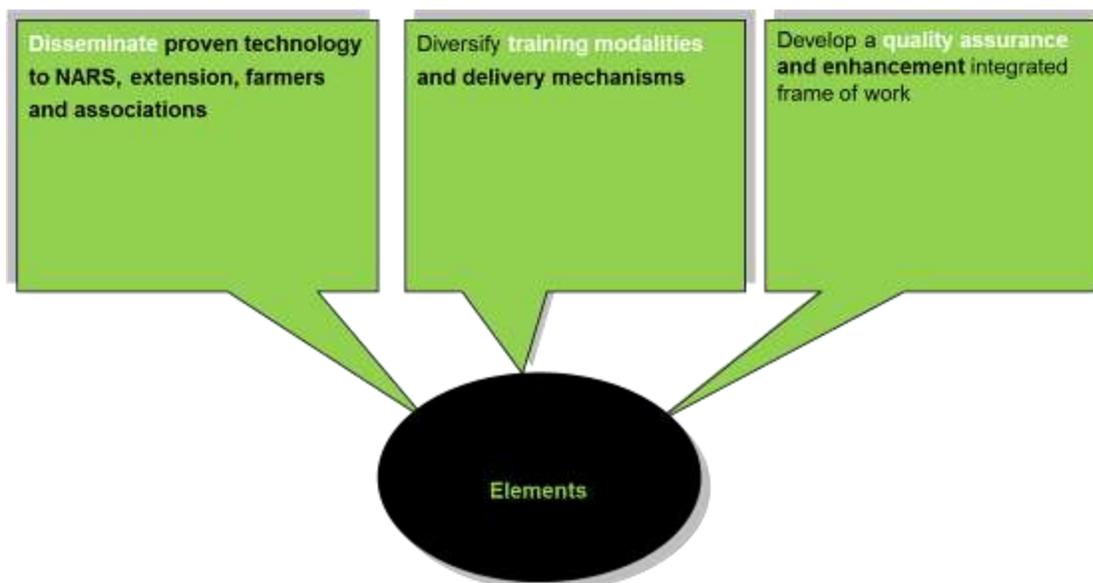
Can we do it? Building on CGIAR Successes

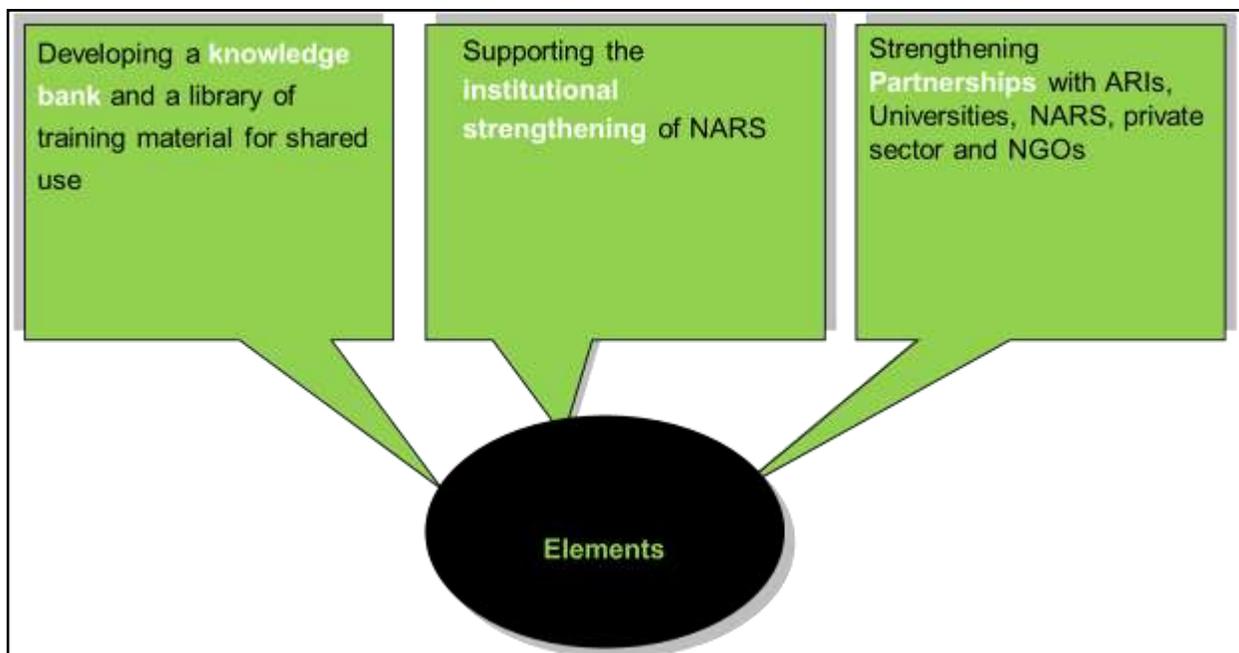
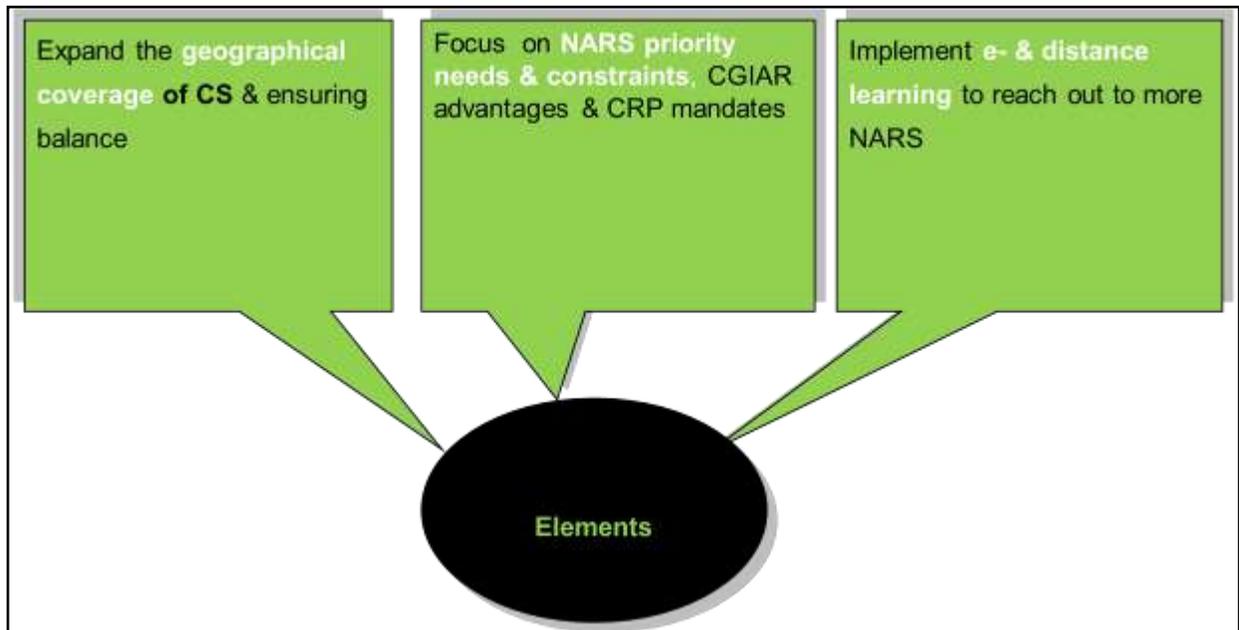
- 80,000 professionals received training from the CGIAR
- One fifth of the CGIAR budget is spent on Capacity Strengthening
- Proven success in strengthening capacity
- Led to strengthened CGIAR network and relationship with beneficiaries
- Resulted in facilitating & implementing more impact on the ground

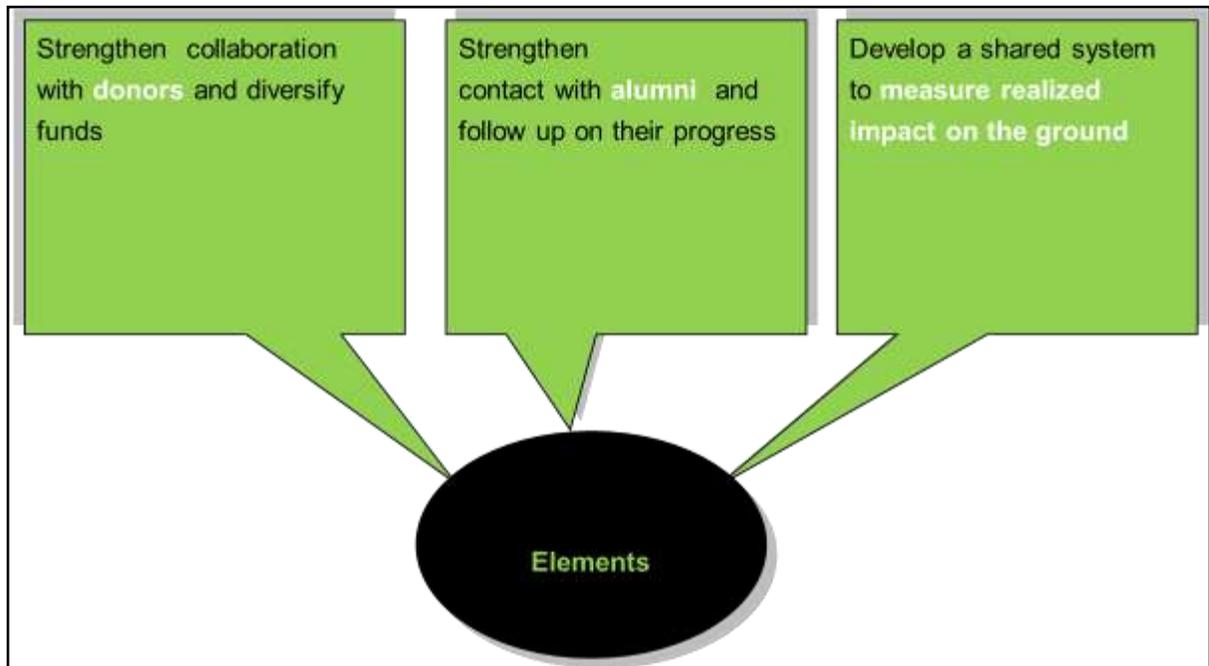
What are we suggesting? On what basis?

Suggested Strategy

- Strengthen capacity of researchers, extension and farmers in higher potential areas on sustainably intensifying production, diversifying the farming system, and connecting to profitable markets
- In highly vulnerable areas: reducing risk and vulnerability.







Providing integrated capacity strengthening packages reflecting the system approach and including:

- Sustainable land and water management,
- Crop genetic improvement and integrated disease and pest management,
- Socio-economics, policy and institutional options.

Themes of Capacity Strengthening

- Innovation systems
- Integrated options and technologies for sustainable management of natural resources
- Integrated options for sustainable intensification and diversification of production systems
- Risk and vulnerability management
- Integrating gender and youth in research to ensure opportunities & benefits for all
- Integrated crop and livestock production management
- Sustainable agriculture
- Integrated post-harvest management and marketing
- Institutional policy analysis and development
- Extension development and innovation
- Geographical Information Systems

Suggested Approaches/Modalities

- Group courses
- Individual degree fellowships – post docs
- Individual non-degree fellowships

- Train-the-trainer with follow up on transfer of knowledge gained
- Fellowships
- Internships
- Visiting Scientist programs
- Field tours
- On farm trials
- Networks /Conferences
- Farmers' schools
- Web portal
- Virtual platforms
- Web-based information
- Manuals/material documentation and dissemination
- South-South interchange of knowledge and experience
- Joint curricula development with universities

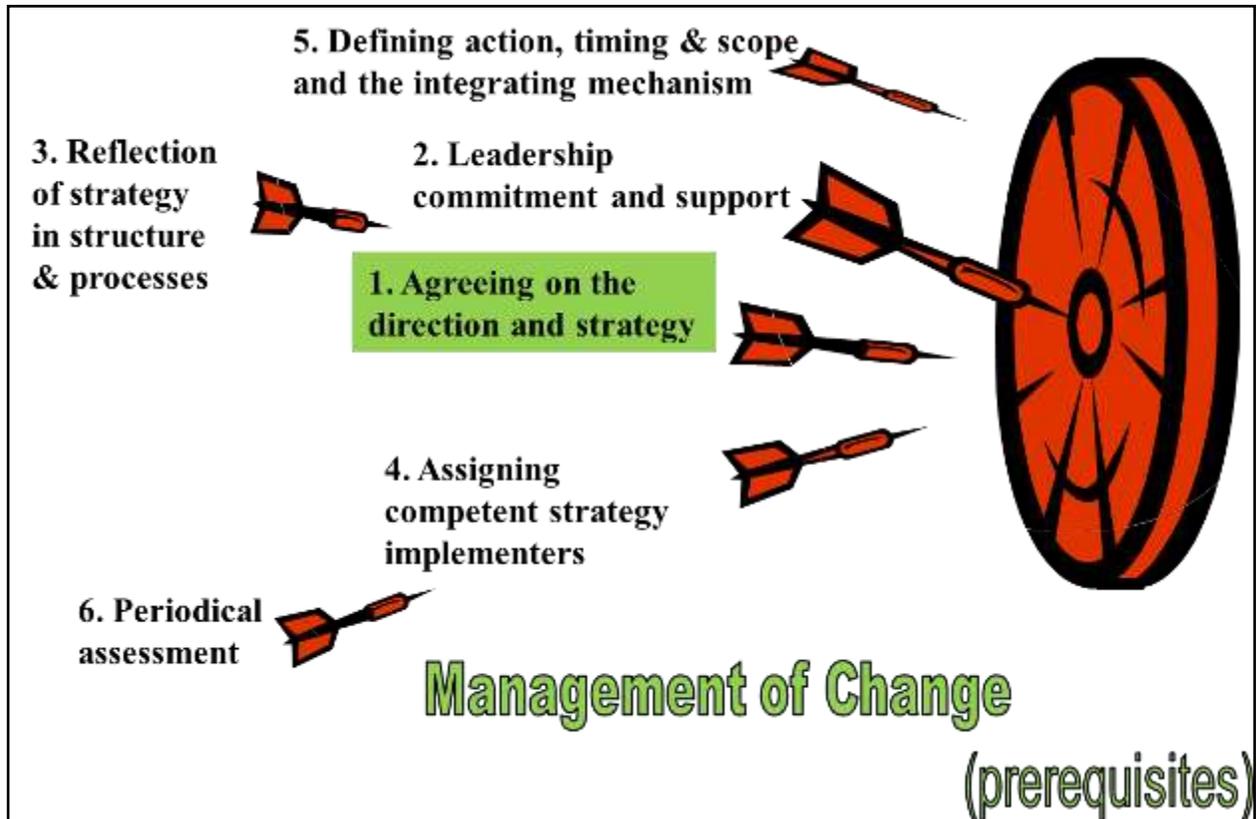
Expected Outcomes

- Know-how and proven technologies is disseminated and adopted
- Young researchers' gain capacity for research for development
- Target institutional capacity to produce and manage research is strengthened
- Gender and youth is integrated in research for development,
- Policy development systems' capacity to produce evidence-based, outcome-oriented policies is strengthened
- Farmer associations are enabled to manage the adoption of introduced know-how
- Farmers are enabled to apply proven technologies and to link to market

Priority Issues that Need our Collaboration

- Include planning and budgeting for in the "Plan of Work and Budget (PoWB) .
- Analyses milestones and outcomes for needed capacity strengthening support
- Conduct a Needs Assessment Survey
- Develop collaborative CS interventions
- Develop trainee learning and trainer teaching assessment tools
- Develop a shared evaluation tool for capacity strengthening activities
- Establish a shared CS/MIS
- Develop a Procedural & QM Manual
- Give priority to train-the-trainer
- Strengthen partnerships with the private sector & civil society

- Strengthen the reach-out to extension, farmer associations & men & women farmers
- Strengthen e-learning initiatives and using virtual media
- Develop shared procedures and schemes
- Establishing a shared platform to deliver distance and e-learning courses
- Establishing a shared “Knowledge Bank”
- Developing a system-wide impact assessment system
- Documentation of the lessons learned



Remarks and clarifications

Question: Capacity building within ICARDA should not be a system approach. CB should include all the actors within an Innovation platform (IP). Actors within the IP should be effectively trained on facilitation capacities.

Questions: How do you integrate new models to old models?

Remark: We need to look at complete pyramid of capacity needs within the IP. The capacity building needs of the entire stakeholder not limited to farmers, researchers (technicians), private sector, and extension.

Question: Are we going to improve the skills of centres who get degrees or people who will bring change. The capacity building process should focus on the implementation.

Response: Capacity building does not equal to impacts. Impacts need to be through IP.

Overall comment: It was noted that to bring about the required change, this programme cannot afford to do take the “business as usual” approach in terms of capacity building. It was also suggested that the programme could learn from the Climate Change Adaptation in Africa programme that put in place that implemented a capacity building initiative focusing on strengthening the soft skills of senior CGIAR researchers.

2.3.6 Systems Approach for Integration of Planning and Product

Presented by Dr Niville Clarke

Dimensions of Dryland Systems Matrix

- Five Target Regions
- Four Themes
- Integrated Technology and Policy Interventions

Those involved in the program know these well – the major dimensions of the program make up the Drylands System Matrix – target regions, themes, and interventions

Drylands - A System of Systems

- Individual cells within the Dryland Systems matrix employ a systems approach - which can be modeled individually
- Modeling the overall Dryland Systems matrix in a common integrated modeling environment
 - Models various dimensions at varying levels of scale
 - Contributes to a consistent planning framework
 - Helps define potential synergies and interactions
 - Contributes to a consistent method for program evaluation and defining outcomes meaningful to investors

Drylands System Program is a “system of systems” where within individual cells of the matrix a system approach is envisioned and can be modeled.

Modeling the Integrated Systems

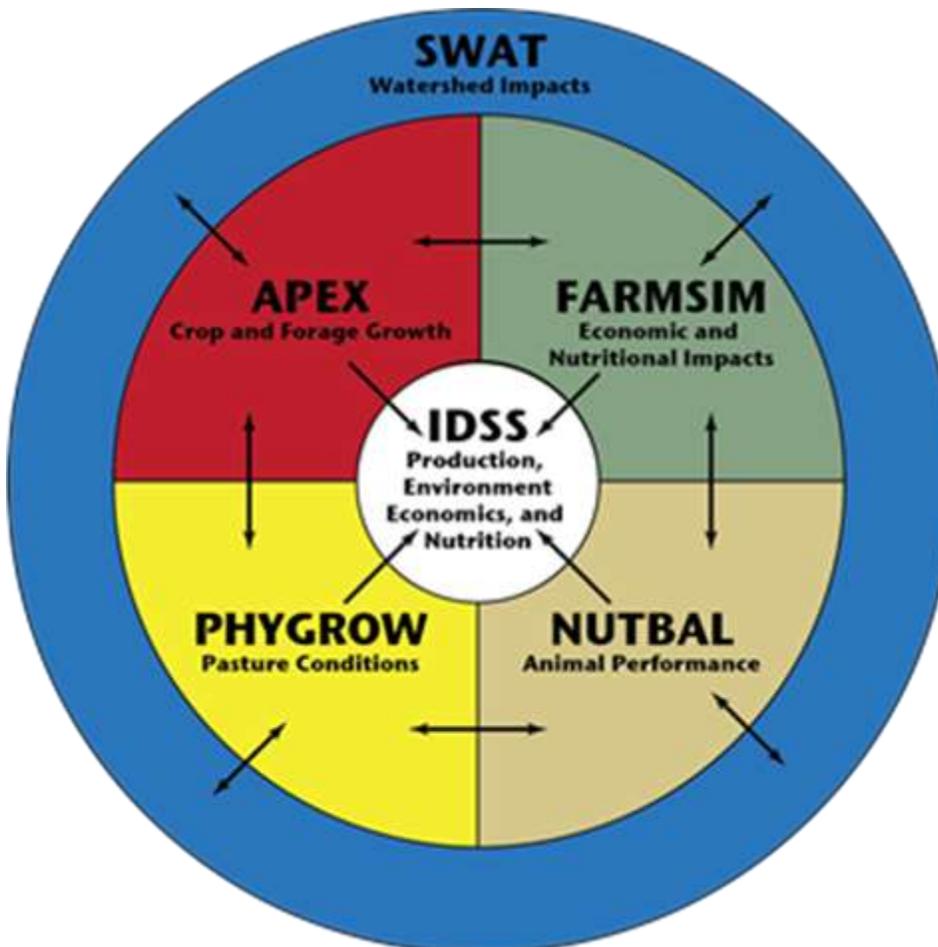
- Dryland Systems forms a complex and challenging modeling matrix
- Integrated Systems approach defines the broad dimensions of the system components and develops explicit relationships between them
- The approach uses an integrated modeling environment for:
 - Planning
 - Discovery
 - Management metrics

- Outcome estimates

Integrated Modeling Environment

- Dimensions of the system
 - Production
 - Environmental
 - Economic
 - Social
- Linkages and interaction between and across the elements of the system is challenging
- Many modeling systems exist and could be relevant – all are paced by limited quality input data
- The goals, construct, and planned outcomes of the Drylands System could be well served by an integrated modeling approach

Integrated Decision Support System



Colleagues at Texas A & M are working together to link a suite of well-established models into an integrated system that is reasonably comprehensive and, hopefully, useful. This approach might be one way of moving the Drylands Program towards a consistent modeling system.

Bill and Melinda Gates Foundation Project Evolution

- Pilot Study – Demonstration of application of the GDSS (IDSS) for technology innovations – subsistence farmers – January 2013
- Presentation at BMGF Headquarters – broad interest in applications
- Additional funding and short term engagement with stakeholders in Ethiopia to validate outputs, sustainability and explore applications
- Completion of recent mission to Ethiopia to help validate the utility and sustainability of the methods in developing countries

The elements of the integrated system has earlier roots in a project done for USAID in the 90's under the SANREM CRSP. There was further evolution of the system under the U.S. Department of Homeland Security in livestock biosecurity. Most recently, the BMGF have sponsored a small contract to evaluate the utility of the system for their applications and those they sponsor. A pilot study to demonstrate the utility of the system was done in Ethiopia where our team had substantial experience and where the Foundation has strong ties.

Stakeholders Engagement in Ethiopia

- Ministry of Agriculture
- Agricultural Transformation Agency
- CGIAR Centers
 - IWMI
 - ILRI
 - ICARDA
 - CIMMYT
 - IFPRI

Our recent mission to Ethiopia established active interest in the use of the IDSS. This includes national programs where there plans are emerging for application in the MOE and the ATA. CG Centers with locations in Addis are also actively interested in the system. This includes ICARDA and the Drylands System Program.

IDSS Applications

- Provide common modeling environment for ex ante analyses to inform investment decisions, evaluate progress during project implementation, and forecast integrated impact from interventions.
- Identify optimum outcomes for situations which require trade-offs among production, environmental and economic benefits and costs.

- Hydrologists can project how water harvesting for irrigation will affect stream flows and water quality indicators (e.g., suspended solids, ortho-phosphate, and biological oxygen demand).
- Soil scientists can project how alternative cropping systems affect indicators of soil fertility (e.g., topsoil pH, organic matter contents, and extractable phosphorus).
- Agronomists can anticipate additional nitrogen fertilizer required to take advantage of irrigation or the increased yield potential of an improved variety.
- Human nutritionists can project the impacts of interventions (such as small-scale irrigation to grow green and yellow vegetables) during the dry season on family nutrition.
- Economists can project impacts of increased investments in additional land, fertilizer, seed, and/or irrigation on the probability of farm solvency over the next five years.
- Government officials concerned about floods and sedimentation of rivers, lakes and irrigation canals can anticipate impacts of check dams on tributaries supporting small scale irrigation projects.
- Government policy makers can anticipate impacts from subsidizing costs of fertilizers, seeds and other inputs on family nutrition and income from sales of agricultural products.

Potential IDSS Engagements with Drylands Systems Program

Utility of integrated production-environmental- economic assessment

- Explore interest/feasibility of application of the IDSS to Drylands System Program
- Additional set of tools to augment ongoing modeling
- Consider cross cutting themes for 5 regions to enable common linked assessment of plans and outcomes
- Establish a framework to use linkages to relevant models and databases within/across projects
- Part of the broader network of CG centers application of the IDSS as a component of the larger system

Remarks and clarification

Remarks: Modelling should complement systems tool as a communication tool for building technology

Question: Is there a platform where people from other discipline may come together to challenge each other.

- The presentation lacked the inclusion of social aspects
- There is an active plan to collaborate with other CG centres such as ILRI who develop a larger network of expertise.
- Models are like any other tool. What is important is how they are used and what they can achieve. As researchers, let us not be too analytical negatively focusing on what does not work. We need to know what we can achieve from the different tools and how to make them work for our situation.

2.3.7 Strategic communication, knowledge sharing & information management in your research

Presented by Mr. Michael Devlin

Outcomes

The Dryland Systems Program is not about research but about how our research can work for people living in drylands agro-ecosystems.

- Dryland Systems' will generate a wealth of new information
 - needs to be well-organized and accessible.
- These approaches add value to your research.
 - Support M&E, outcomes and impact.
- 'Open Access' is coming
- Communication, information Mgmt & Knowledge sharing are needed in your project cycle

Moving toward CGIAR Open Access

Now in process "within five years all CGIAR information will be Open Access."

CGIAR programs and centers will provide:

- All outputs in common structure and formats (open and harvestable database/repositories).
- Submission copies of peer reviewed papers
- More science published in open access journals
- Data available

Tactics

- **Strategic communication:** engage and influence specific groups.
- **Knowledge sharing:** improve effectiveness of research process, learning in projects, capturing and sharing experience, 'learning before, during and after'
- **Information management:** capture, organize, make accessible all project information

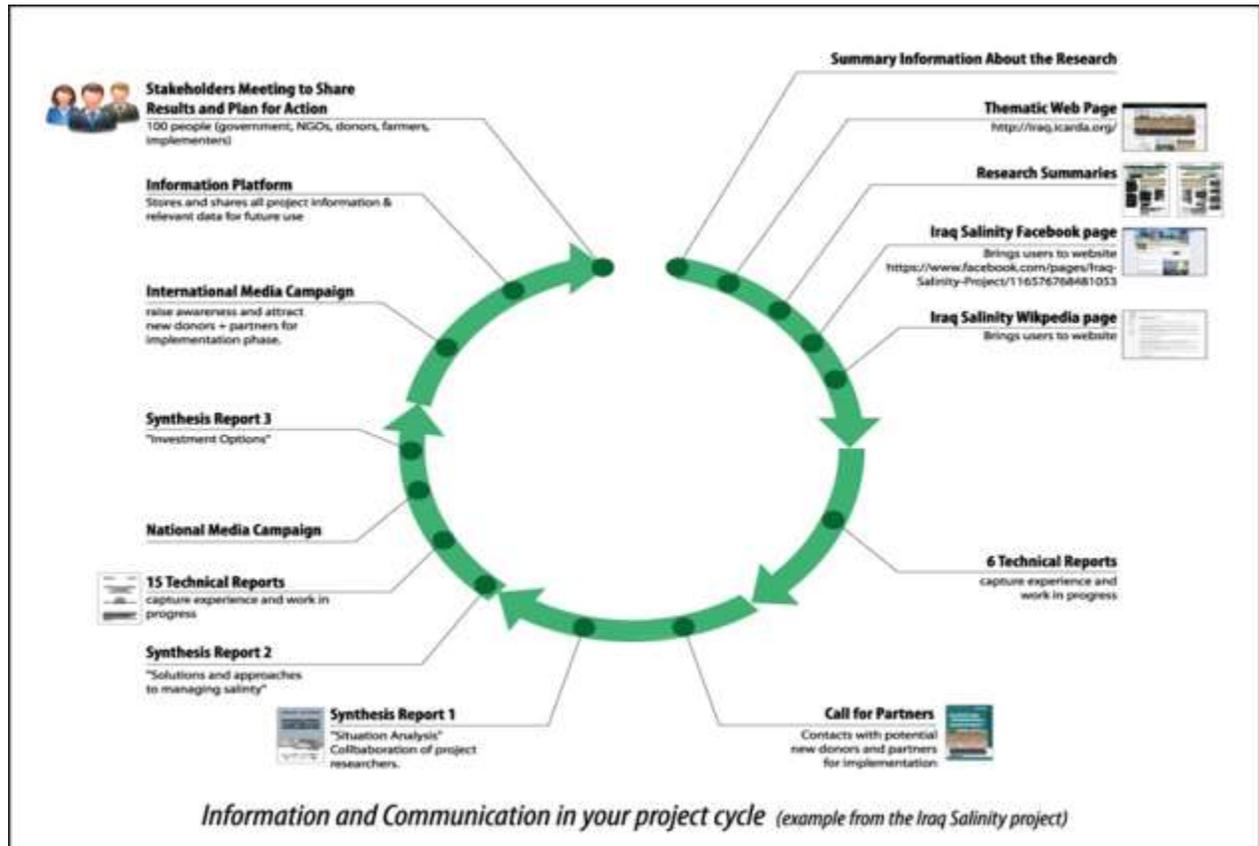
Dryland Systems Strategy - Key Action Areas

A program-level view:

- **Marketing communication:** ensuring high visibility and branding of the program.
- **Strategic communication and advocacy:** informing and influencing specific groups worldwide, getting the science into use.
- **Knowledge sharing and learning:** processes and techniques to capture and synthesize the learning from the research process as it progresses.

- **Information management:** processes and guidance for the capturing, organizing (cataloguing) and open access to all data, and information generated by Dryland Systems.
- **Website:** provide broad access to concepts, key messages and results of Dryland Systems.

Communications & information in research project cycle



Strategic Communication

Use research evidence to engage and influence specific groups

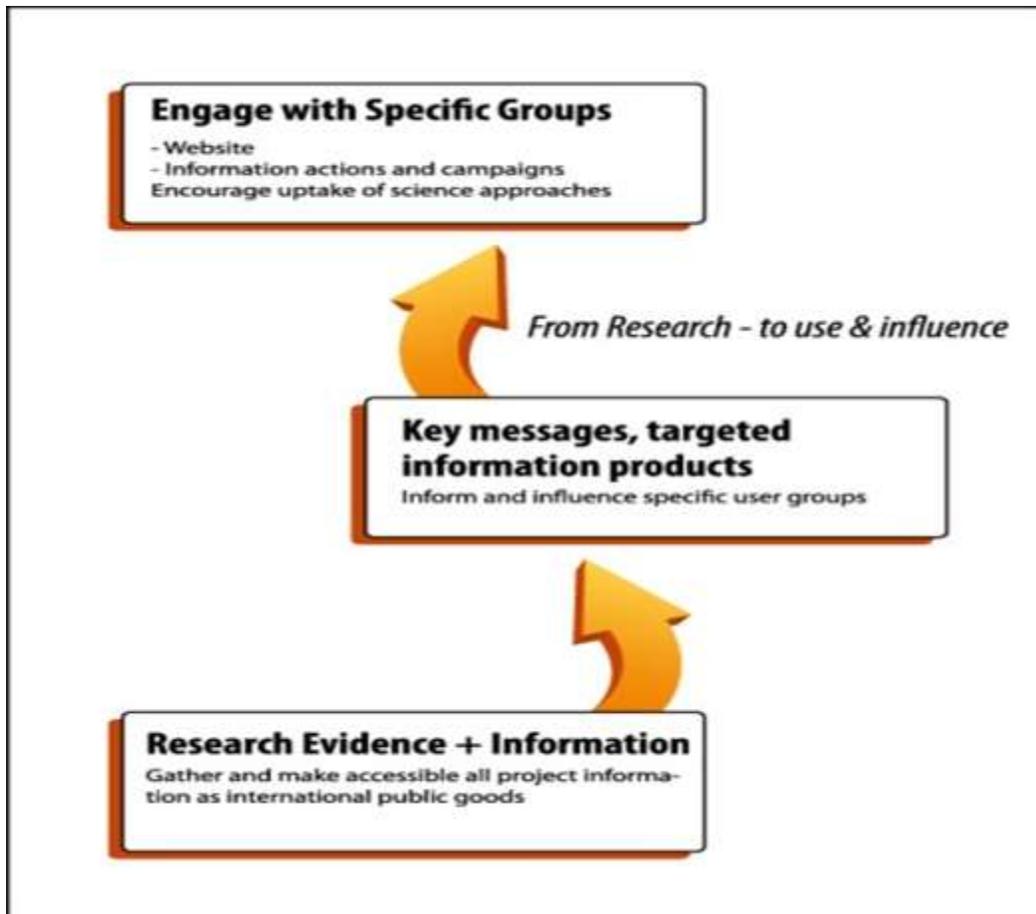
- Targeted products and services:
- Web tools
- Policy information (supported by campaign)
- 'Research into use' activities (supported by campaign)
- Engaging users as an integral part of your research process.

What's wrong with this picture?



'Outcome' thinking

- What do we want to happen?
Changing behavior among specific groups
- Who can we influence directly?
Who should to work with to deliver results?
- How to best achieve this?
Most appropriate communications activities, products, services?



Knowledge sharing: Learning before, during & after

Simple ways to speed and share learning and expertise: improve the quality and effectiveness of any project.

- **'Peer assist'**- tapping the 'database' of peers' experience.
- **Track, work in progress - document & share learning**
- **'After Action Review'** – three simple questions

From: "How can we afford the extra time to do this....?"

To: "How can we afford not to do this!"

- **Optimal meeting facilitation and organization.**e.g. This meeting...

Bedtime reading: practical ideas you can use.....today

Example – Learning Cycles

(ICARDA-IDRC-CIAT)

Dynamic group learning process – brings together a group with expertise (success or failures!) with group than can acquire that expertise.

Premise: Linear process of study-analysis-advocacy-action is too slow.

More rapid uptake of new approaches:

- Policy making
- New practices

Value chains in Egypt and Morocco

Access to markets?

How can we see market access as a driver for introducing technologies and improving production systems?

- If market access is the driver, a series of incentives to open access to markets can be identified to suggest interventions to be developed, improved or integrated.
 - For example: natural resources management (land and water), farming practices, crop diversification, policy and institutional options.
- What makes access to markets work or not in specific cases.
- Efficiency in farming/technology transfer approaches.

Example – knowledge sharing

(Land degradation – IFAD 12 MENA countries)

‘Live group review’ & synthesis of 23 land degradation interventions.

- In what other agro-ecosystems can your intervention be applied?
- 5 day process to produce finished syntheses
 - Ready for sharing

Managing our research information

Capture and Document work in progress

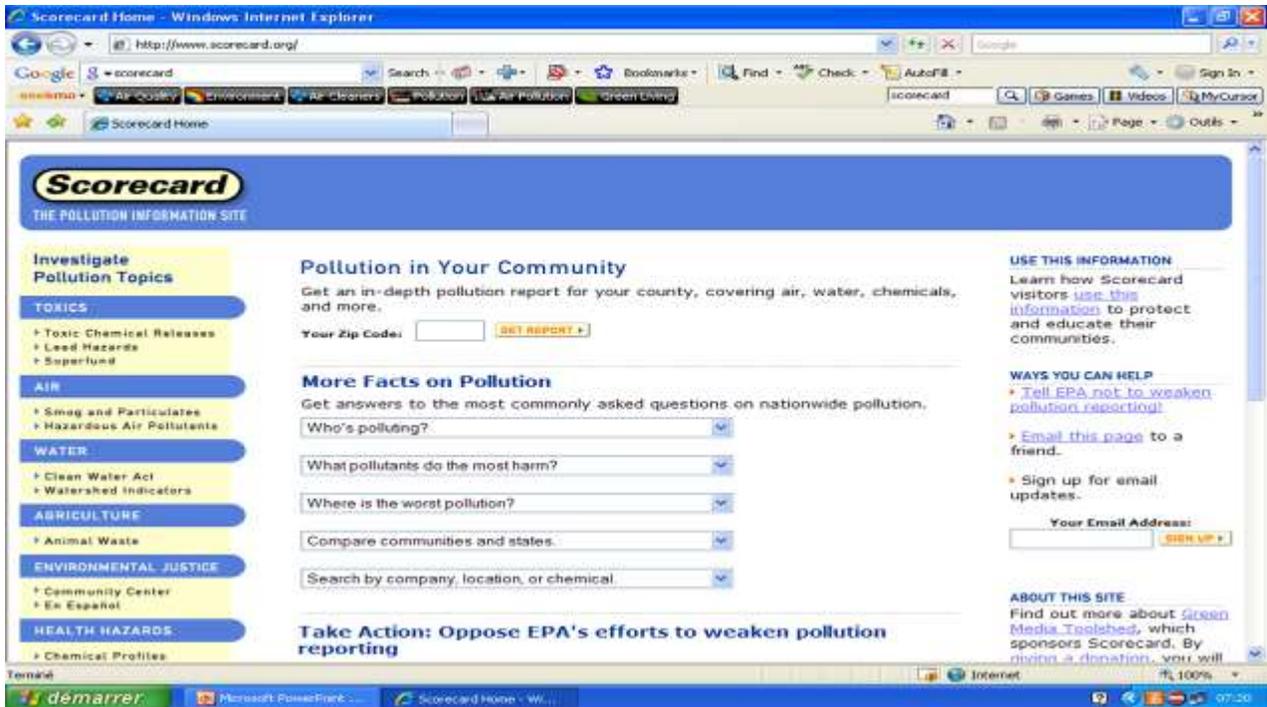
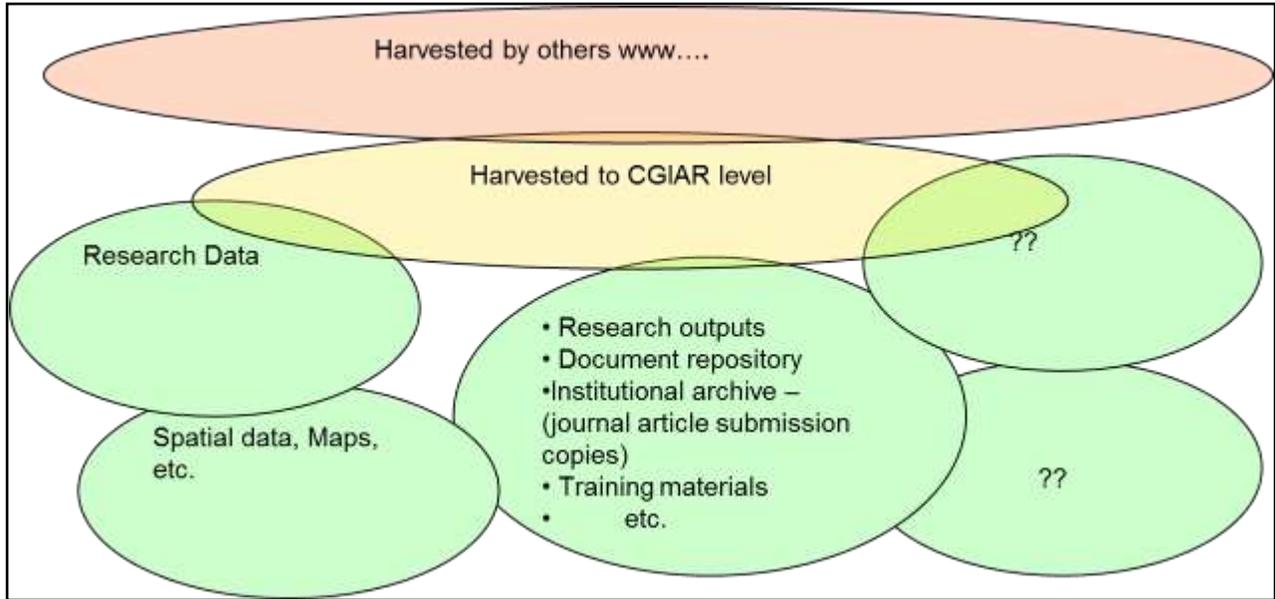
- Dryland Systems – Technical Papers, Working Papers, other information products.

Organize information and make it available

- Dryland Systems information platform
- Document repository for all outputs (papers, surveys, reports, maps, photos, presentations, etc.)

- 'Harvestable' using common metadata standards.
- Agreed processes for capturing information in each Dryland Systems project cycle.

What are the elements of the Dryland Systems 'information architecture'?



Find environmental information about your community: learn where the pollution is, where the toxic chemicals come from, what the health risks are.



Provides taxonomic, conservation status, and distribution information on species that face a high risk of global extinction

How can we help?

How to embed this thinking and these practices in your project cycles?

Remarks and comments

Question: How can we improve communication between the different levels and expertise; between communities, sites, environment, inputs suppliers etc.?

Response: CRP on dryland systems is not starting from scratch, There are lots of information and knowledge there already generated that should be captured and learned from. How then can the existing knowledge be documented and community approach enhanced? We are not starting from scratch. Rapid impacts in marginalized areas should be enforced.

Question: How do we package the different integrated approaches that already exist?

Response:

- We have excellent communication between the partners. What we should be worried about is the slow adoption of technologies.
- The different communication materials should be translated into local languages to reach out to internal partners within the countries
- The CRP is focused in R4D. It goes beyond technical papers. The focus should be on technology dissemination. There is a need to document lessons learned, best practices, and failures analysing why the changes did not happen, why and how to make the changes to happen. The

failures and successes at different levels should be documented and eventually disseminated to the different audiences.

- Success stories from the communities and researchers need to be documented and disseminated.
- The purpose of communication should be clearly defined. Be clear why do you want to collect data, synthesis and share it out. M&E and learning is a major step towards achieving impacts.

Overall comment – the major message of this presentation is – how can we help you to communicate and learn. It is up to the teams to demand for support to improve their communication and learning. It is no longer the responsibility of the communication team to communicate for regional and national teams but they have to be strengthened to tell their story.

2.3.8 Geoinformatics

Presented by Dr. Chandra Biradar

The role of Geospatial Science, Technology, and Application (GeSTA) in CGIAR Research Program Dryland Systems was presented in highly technical form.

2.3.9 Research Support systems

Presented by Dr. Carlos Barahona

Remarks and clarifications

- RSS provides a platform for data sharing between partners
- RSS starts from the point where scientist conceptualizes the research devising mechanisms to enable the scientific community to access data when necessary and needed. The how is what we should begin to work on.
- There is research but the system cannot be strengthened without private sector. We need work with the private sector?
- There are multiple partners working in multiples context. The focus is to share information generated with different partners.
- The focus should be on how to make research more attractive to attract the private sector.
- We should not be pointing fingers. Let us define how to create a system where farmers can begin to demand for services instead of pushing technologies down the throats of farmers. The demand for support services should start with us.

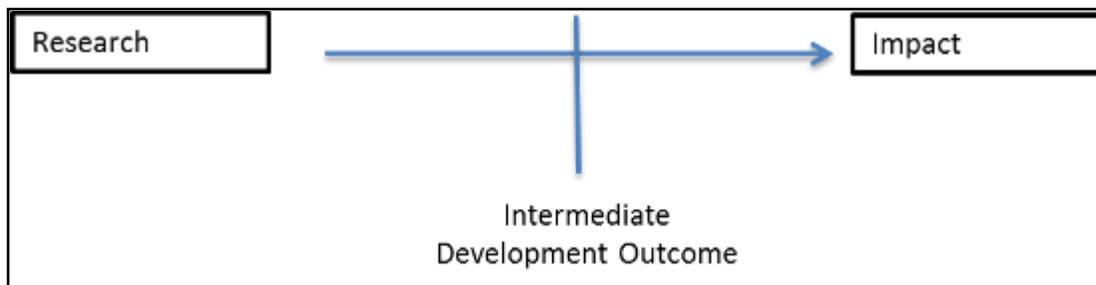
3) WHAT TO ACHIEVE: THE INTERMEDIATE DEVELOPMENT OUTCOMES

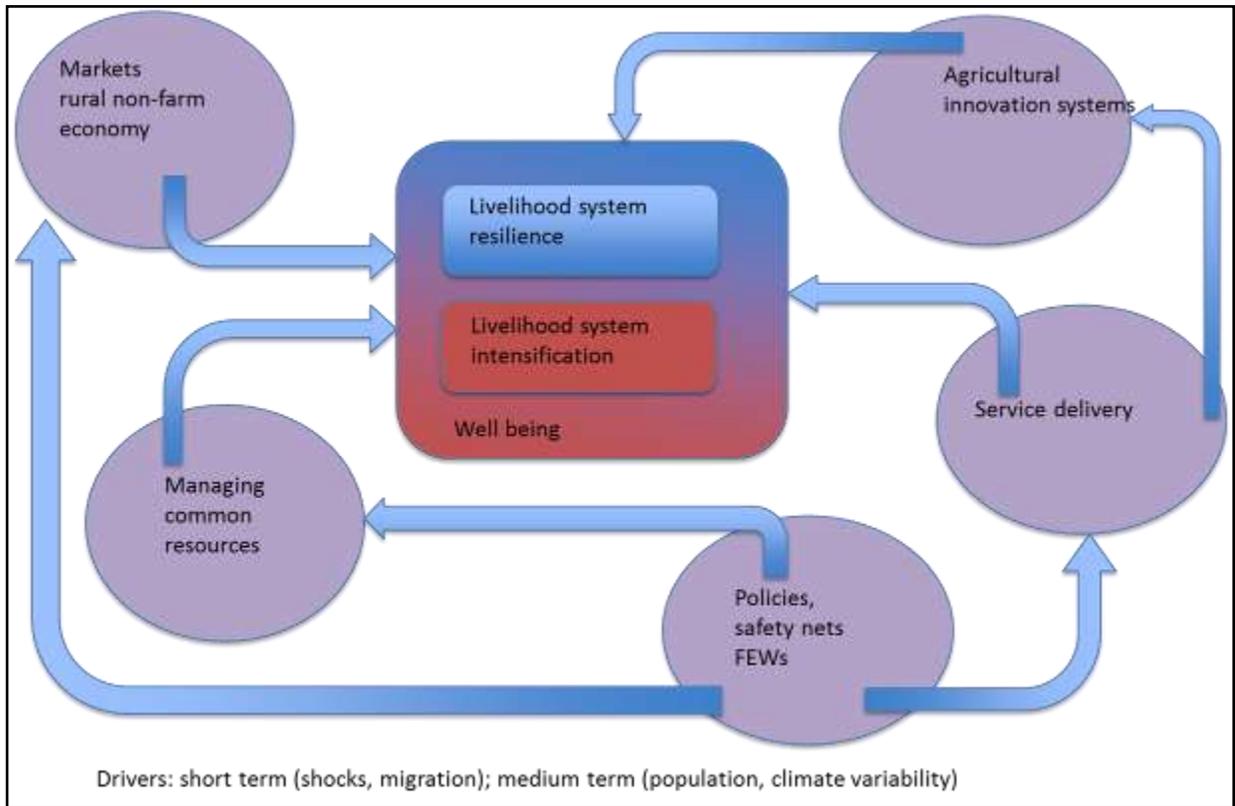
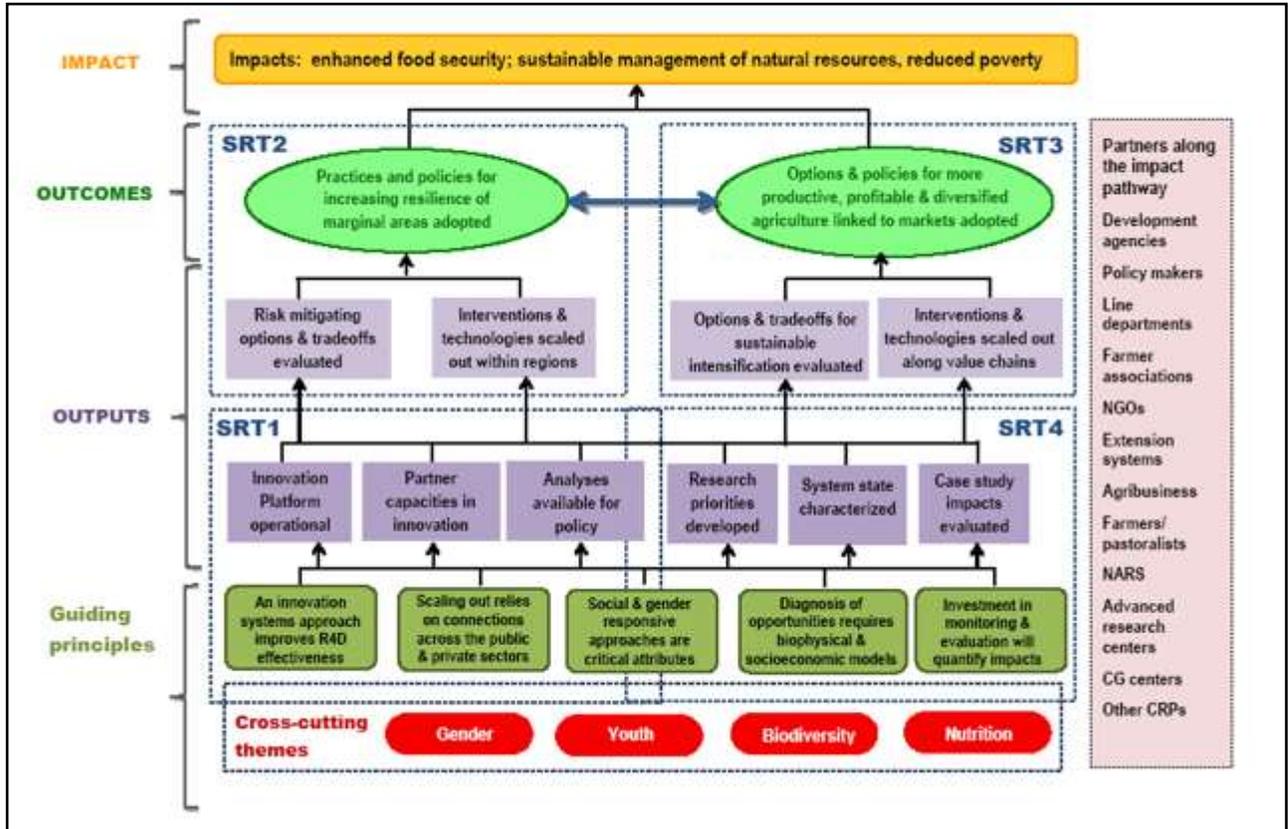
The CGIAR reform process is focused on organizing a global research agenda at a CGIAR system level with the CRP as the portfolio. This change process is result based. However, based on the realization the research has a long lag time and that impact cannot be predicted with certainty, Intermediate Development Goals (IDO) were defined. The IDOs were to be used to measure progress towards impacts. The session was critical in enhancing the understanding on the importance of integrating the IDOs within the Strategic Research Themes.

CGIAR Reform

- Organizing a global research agenda at a CGIAR system level: the CRP portfolio
- Results based management, but
 - Research has long lag time
 - Impacts can't be predicted with certainty
 - How then to measure progress toward impact?

Impact Pathway





IDOs

1. More stable and higher per capita income for intensifiable households (above an asset threshold)
2. More resilient livelihoods for vulnerable households in marginal areas
3. Women and children in vulnerable households have year round access to greater quantity and diversity of food sources
4. More sustainable and equitable management of land and water resources in pastoral and agro pastoral areas
5. Impact through better functioning markets underpinning intensification of rural livelihoods
6. More integrated, effective and connected service delivery institutions underpinning system intensification
7. Policy reform removing constraints and incentivizing rural households to engage in more sustainable practices that intensify and improve resilience

Women and children in vulnerable households have year round access to greater quantity and diversity of food sources

- Background
 - Meta evaluations suggest no link between food based nutritional approaches and nutritional outcomes of vulnerable groups
 - Interactions with other health factors (e.g. parasite burden) and use of income
 - Women's control of food / income, home processing, distribution within household
 - Importance of community based nutritional education
 - Maintaining access to milk (trend in drylands often more people, fewer animals) – but data all 10-15 years old
- Activities and outputs
 - Diagnosis of constraints and opportunities of local food systems (food taboos, longer hungry seasons) leading to identification of constraints and opportunities to improve year round access to food
 - Systematic research on interventions to address identified constraints and opportunities, leading to a matrix of tested interventions and delivery strategies associated with the contexts in which they work

IDO 1: NARES and health sector organizations work together and adopt diagnostic and systematic research approaches to promoting and developing interventions to improve vulnerable women and children's access to, and control of, more and more diverse food sources, throughout the year.

More stable and higher per capita income for intensifiable households (above an asset threshold)

- Outputs:
 - Improved intensification options (components, interactions and their management; information on investment costs, returns and risk; risk mitigation)
 - Tools, methods, processes and capacity of NARES to create and customize improved intensification options to local circumstances across scaling domains
 - Action research focused on scaling domains rather than pilot sites
- Connection with market IDO

**IDO 2: NARES use tools, methods and processes to generate and customize improved intensification options for targeted groups of intensifiable households
More resilient livelihoods for vulnerable households in marginal areas**

- Outputs:
 - Improved resilience options (components, interactions and their management; explicit consideration of buffer functions, managing trade-offs between production and risk; nested scale risk mitigation, including incentives to adopt them)
 - Tools, methods, processes and capacity of NARES to create and customize improved resilience options to local circumstances across scaling domains
- Connection with service delivery IDO

**IDO 3: NARES use tools, methods and processes to generate and customise improved resilience options for targeted groups of vulnerable households
More sustainable and equitable management of land and water resources in pastoral and agropastoral areas**

- Outputs
 - Technologies, tools, methods, processes and approaches developed and tested for evidence based ecosystem management
 - Focus on negotiation support (amongst stakeholders) and governance models

IDO 4: Multiple stakeholders in pastoral / agro pastoral areas, use evidence based ecosystem management, at community level in the governance of common and privately managed land and water resources.

- Target stakeholders need to be fleshed out with respect to
 - implementation (scale of governance for doing EM at community level) and
 - scaling this up and out (who promotes adoption across new communities and regions)

Impact through better functioning markets underpinning intensification of rural livelihoods

- Background
 - Lower transaction costs (assembly points, market hubs)
 - More innovative partnerships with entrepreneurs

IDO 5: Farmers and pastoralists (especially women) have better access to more diverse, efficient and equitable markets

- Need to draw out this IDO in more detail in terms of actor behavior – marketing commission, traders, warantage (warehousing and credit system).

Impact is through more integrated, effective and connected service delivery institutions underpinning system intensification and resilience

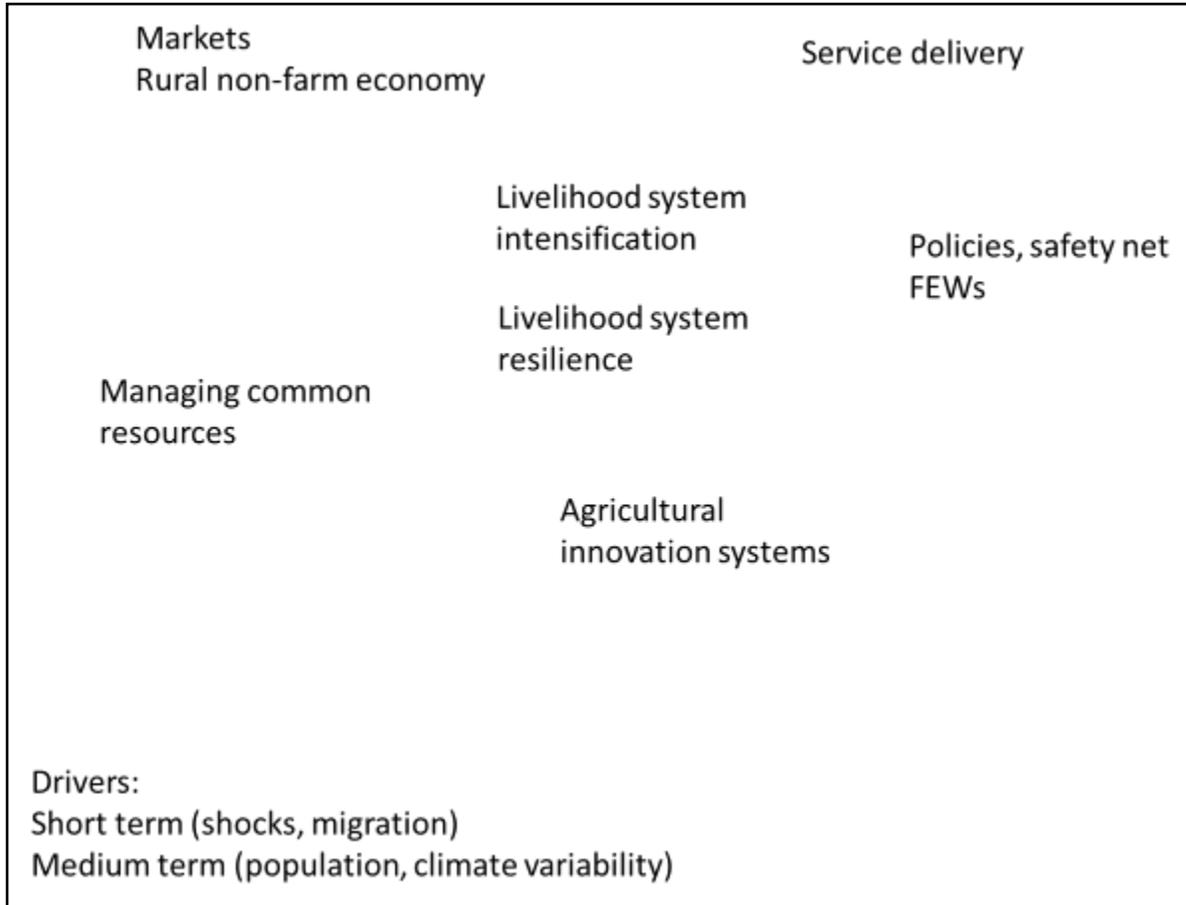
- Insight – the further we get from the farm the less capacity we have in the CG – new forms of partnership become important

IDO 6: More integrated, effective and connected service delivery institutions underpinning system intensification and resilience

Impact through policy removing constraints and incentivizing rural households to engage in more sustainable practices that intensify and improve resilience

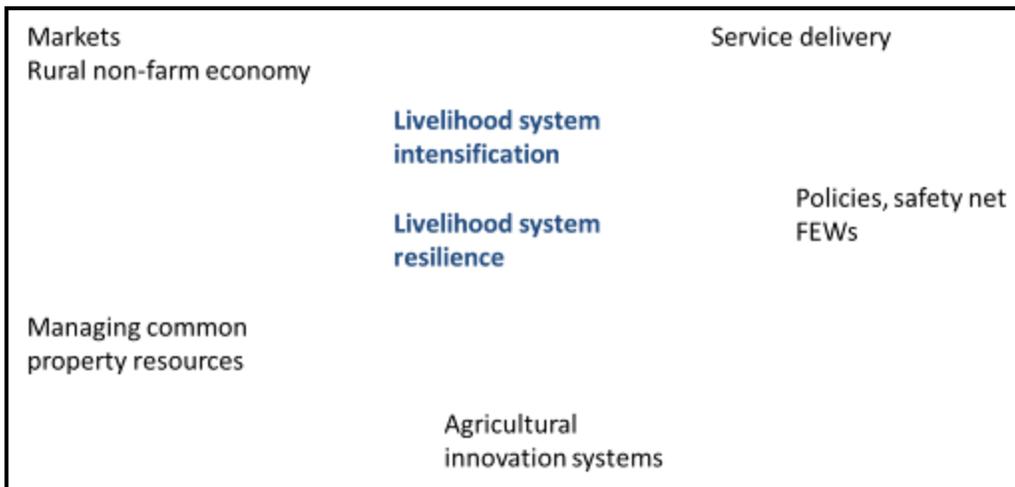
- Background
 - Some current policies have perverse impacts on resource management that constrain options (e.g. insecure land tenure may mitigate against investment in sustainable practices; forest legislation may prevent farmers utilizing native trees on farms)
 - Incentives may be required for vulnerable households to invest in sustainable practices

IDO 7: Policy reform to remove constraints and improve incentives to rational management of natural resources



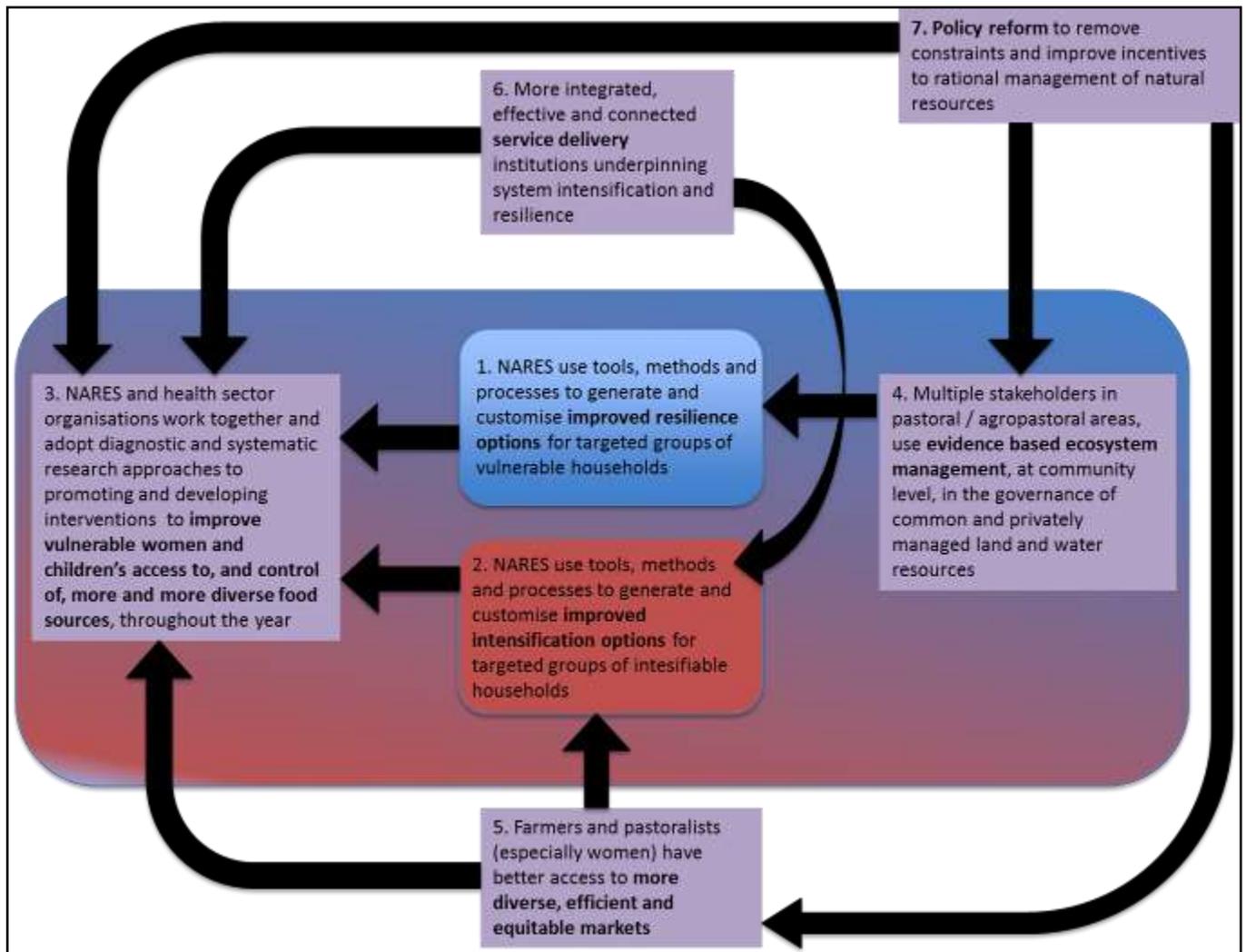
- Feedbacks non linearity etc.; triple loop learning
- Bridging gaps between farm and immediate landscape scale
- Intensification / risk reduction

Theory of Change



IDO's

- More stable and higher per capita income at hh level
- More resilient livelihoods for hh in marginal areas
- Greater quantity and diversity of food sources available to women and children in marginal hh > better nutrition
- Evidence based ecosystem management (governance) > sustainable and equitable resource management
- More efficient and equitable use of water
- More efficient and equitable use of grazing areas
- Market diversification (for more products) – commercialization – better access
- More integrated, effective and connected service delivery institutions underpinning system intensification
- Policy reform to remove constraints and improve incentives to rational management of natural resources



Remarks and clarifications

Remark:

- The background information for which IDOs are based should be properly assessed. The IDOs should be based on already existing knowledge.
- The emphasis on natural resources overlooks the needs of the arid areas. The focus should be on social needs of the arid population.
- Outcome by definition is outputs that are taken up by end-users, and utilized leading to impacts.
- There are intermediary users and end-users. Research outputs needs to be embedded within the development. The utilization of the outputs may not necessary produce an impact.
- The information flow between the different teams working in the different IDO needs be clarified.
- The IDO idea is very innovative. The impact and indicators for high level research should be contributed towards by all the partners and not limited to the research institutions.
- Impact analysis of the things already done by the partners is what will go into the report

3.1 Unpacking the IDOs

This session was based on the following Intermediate Development Goals (IDO) as presented in the previous session;

1. More stable and higher per capita income for intensifiable households (above an asset threshold)
2. More resilient livelihoods for vulnerable households in marginal areas
3. Women and children in vulnerable households have year round access to greater quantity and diversity of food sources
4. More sustainable and equitable management of land and water resources in pastoral and agro pastoral areas
5. Impact through better functioning markets underpinning intensification of rural livelihoods
6. More integrated, effective and connected service delivery institutions underpinning system intensification
7. Policy reform removing constraints and incentivizing rural households to engage in more sustainable practices that intensify and improve resilience

The participants took the opportunity to critically analyze each of the IDOs above and define the priority research issues within each IDO should be implemented in the targeted regions. They further identified the principle research outputs that could be delivered over the next two years. The discussions zeroed in on

- 1) What are priority research issues within each IDO around which research would be done in the regions over the next 5 years
- 2) What are the principal research outputs that can be delivered over the next two years?

attaining four systems level outputs: poverty reduction; improving food security; improving nutrition and health; and the sustainable management of natural resources. The discussions in the table groups were guided by the question in the box. The outputs from the groups are summarized below:

3.1.1 IDO1: More stable and higher per capita income for intensifiable households (above an asset threshold)

Outputs 5 years

- Gain a thorough understanding of the dynamics of market-driven small-scale farmer aggregation for increased access to innovations, services, markets and finance, to develop options with partners, to enable farmers to increase their income
- Based on a functioning innovation platform (e.g. this is an output in and of itself)
- Understand what kind of diversity in production systems is needed to stabilize incomes.
- Identify entry-points for improving the system
- Identify factors affecting the building of innovation platforms by National research and development programs and NGOs that promote adoption of intensive and diversified production systems
- Find solutions to farmers better organizing themselves and making better business decisions
- Identify reasons/dynamics of external shocks to the system (e.g. prices, weather)
- Identify most suitable technologies and practices for sustainable intensification for more productive, profitable and diversified dryland agriculture

2 Years

- Perform value chain analyses to identify key bottlenecks and demand-driven opportunities in production systems (food and feed)
- Universities (economics faculty), CGIAR Centers, NARES/MoA, women cooperatives, industry associations, farmer unions
- Understand the system and identify actual productivity and the potential productivity and constraints

Tools, processes

- Identify decision-support systems (now, future)
- Use tool to determine which technologies farmers could adopt
- Review past research by CGIAR Centers to see whether it is still relevant for the researchable issues worked on today
- Baseline study
- Partner with existing farmer organizations on innovation platforms

3.1.2 IDO 2: More resilient livelihoods for vulnerable households in marginal areas

Proposed research outputs:

- Metrics, methods, models and tools to measure resilience developed
- Status and trends of the resource base and the role of assets in resilience assessed
- Perceptions, knowledge about resilience strategies diagnosed and documented
- Role of non-agricultural activities and markets for resilience analyzed
- Technology, institutional and policy options on systems integration for more resilient livelihoods identified, developed and tested
- Technology, institutional and policy options for conservation and sustainable use of agrobiodiversity and livelihoods diversification identified, developed and tested
- Technology, institutional and policy options for better water and soil management for enhancing resilience identified, developed and tested
- Technology, institutional and policy options for value addition and alternative sources of income identified, tested and promoted
- Progress towards IDO monitored and evaluated
- Capacity of researchers and other stakeholders developed

Cross-cutting outputs

- Issues relating to gender and youth mainstreamed into the research agenda

3.1.3 IDO3: Women, men and children in vulnerable household have year around access to greater quantity & diversity of food sources

What are priority research issues within each IDO around which research would be done in the regions over the next 5 years

- Assessment of constraints and opportunities
- Assessment of existing locally produced foods
- Value chain analysis for selected specific commodities
- Women market access
- Access to information about nutrition and safety foods
- Indigenous knowledge of foods production and processing
- Women and children access to diverse food over the year
- Assessment of the type of foods produced and distributed
- Quantitative and qualitative assessment of foods consumed by women and children
- Home gardens

What exactly do you want to achieve (discuss to develop a common understanding

- To empower women (decision making, equitable access to information, education, resources, market, income, technologies, etc.)
- Yearlong provision of locally produced foods, sufficient in quality and quantity and equally distributed among household members

What are the research outputs that can be delivered over the next 2 years

- Assessment of constraints and opportunities
- Assessment of existing locally produced foods
- Access to information about nutrition and safety foods
- Indigenous knowledge of foods production and processing
- Women and children access to diverse food over the year
- Assessment of the type of foods
- Assessment of food consumption and dietary quality among women and children

How will you measure achievements of the IDO?

- Baseline : current level of empowerment, assess the current nutritional status and food availability, food consumption and dietary quality
- Identification of constraints & opportunities around the access to food for different categories
- Identify interventions to be developed to address the constraints
- Indicators: level of empowerment, Nbr of undernourished women and children, adequacy of diet, etc. (to be developed in a participatory way).

Why is this IDO important - how does it contributes to development impact

- Better nutrition for women and children will help reducing poverty of future generation
- Women are a key player in production systems

What changes will individuals and organizations have to make to achieve the IDO? How will that be measured?

- Individuals: Analyze attitudes and behavior and raise awareness through civil societies and community-based organisations
- Organizations: Promote civil societies and CBOs
- Institutions: Policies to have democratic regulations and laws empowering women
- Measurement: Women empowerment index, social capital indicators (sustainable livelihood approach); adoption of new behaviors and practices

What products will be produced by research and others to bring about the changes? How will they be measured?

- Constraints & opportunities identified
- Tools and methodologies to measure empowerment fine-tuned
- Options to produce more and better food developed
- Foods available are known
- Adequacy of diet is measured
- Nutritional status is determined

What strategies – broad actions will be carried out?

- Diagnostic study to understand the needs, the different systems (needs, opportunities, constraints, value chain, biodiversity, market access, food and nutrition adequacy)
- Develop partnerships (NGO, research institution, policy makers)
- Develop capacity building

Who will be the main actors? How will their participation be secured?

- Women and men
- Key stakeholders (NGOs, policy & decision makers, smallholder farmers, development agencies, women associations and other associations, extension services)
- Universities and other research institutions

3.1.4 IDO 4: More sustainable and equitable management of vegetation, land and water resources in pastoral and agro-pastoral areas

General Comments

- R in D
- All IDOs are linked together
- Land degradation and livelihood improvement could be going at different direction (short term benefit may not reflect long term sustainability)
- Policy: countries have already pastoral code, but lack of reinforcement of existing regulations
- Time frame to deliver an outcome (SRT2)
- Dry lands are complex ecosystem (understand social aspect)
- Crop Range Livestock Production System
 - Integrated system bring about balance and efficient use of results
- Recommendation: directives for dry land in terms of managing resources (negotiated terms to manage resources even for privately owned lands (publicly co-managed))

What are the priority research issues around which research would be done in the regions

- **Low adoption of technology:** Why the research results are not adopted
 - What is needed to increase adoption (Innovation platform)
- **Collaboration/participation of all stakeholders**
- **Impact of CC: Understand impact of climate change (precipitation and temperature)**
- **Miss use of water resources: We need to pay more attention for water demand and use.**
- **Continuing land degradation: How to alleviate/stop land degradation while increasing income**

Issues

- **Poor governance** (social/institutional aspect):
 - Need for participatory and multidisciplinary approach is necessary
- **Poor market access and linkages: Create market demand leading to policy and institution**
- **What are key** factors that contribute to sustainability and equity:
 - Land use policy
 - Land tenure and accessibility (in Central Asia land belongs to the state and this should be taken into consideration)

Research areas

- Multiple stakeholder (negotiation)
 - Who is responsible to outscale?
 - Who would adopt?
- Reverse/restore vegetation, land and water resource degradation
- Changing access to land and water resources
- We need to change management (overuse)
- Need to develop tools and methodology

What are the principal research outputs that can be delivered?

- Agronomic packages
 - Supplemental irrigation
 - Better utilization of genetic resources
- Quantification of land degradation (diagnostic)
 - Biodiversity (such as threat of invasive species)
 - Monitoring and assessment
- Have a legal framework

Outcomes

- Packages for sustainable use of vegetation, land and water
- Study/monitor impact of adoption of these packages
- What are suitable areas for diversification and intensification
- Use of proper Statistical tools

What exactly do you want to achieve?

- Define key priorities (short and medium term)
- Define clear outcomes
- Try to find policy that can change social behavior

How will you measure achievement of the IDOs?

- Obtain adequate baseline information (biophysical and social):
 - know the facts before we intervene
- Define indicators (biophysical and social):
 - Define clear & measurable indicators at field level
 - Depend on technology, region, etc.
- Develop proper tools:
 - Need reliable tracking system (tools) to assess and monitor condition of our NR (such as geo-informatics)
- How do we measure sustainability and equity?
 - Long-term which we cannot afford so we use innovative tools such as modeling
 - Institution sustainability
 - Social sustainability (conflict between customary and government laws)
 - Example of sustainability: Hima concept

Why is this IDO important – How does it contribute to development impact?

- Represent huge area (CWANA 70%)
- Target poorest farmers
- NR continue to degrade at an alarming rate
- Affected most by global warming (higher temperature, recurrent drought)

What changes will individuals and organizations have to make to achieve the IDO? How that will be measured?

- Policy reinforcement and change if needed
- Innovation platform

- Define mechanism to disseminate technology

3.1.5 IDO 5: Impact through better functioning markets underpinning intensification of rural livelihoods

Outputs

- Analysis of demand for local products (at different scales) that help smallholder producers to target markets with specific crops and livestock types
- Value addition options for increasing hh income with gender disaggregated impacts
- Tools and applications that increase access to market information to men and women farmers and pastoralists
- Interventions that increases the efficiency and equity of value chains of major commodities
- Capacity building for more efficient and equitable rural (men and women) association for improved access to markets (aggregation).
- New agricultural market opportunities for high value and high income for rural communities identified

3.1.6 IDO 6: Policy Reform

Outputs

- Understand History of agric. Policies and reforms through economic context and winners and losers (i.e. smallholders, gender and youth group)
- Understand “Lobby” groups (i.e. donors, NGOs, farmer unions etc.) and evaluate if what it was proposed by them was evidence-based
- Assess the decision making process
- Identify what is the balance between intensification and resilience
- Identify the constraints that need to be removed in order to apply effective policies

How will you measure achievement of the IDO?

- M&E, Survey, literature document review, mapping (indicators: productivity, land use, water use, income, losers and winners (youth employment).....)

Why is the IDO important – how does it contribute to development impact?

- Removing constraints contributes to policies that support the evolution of the environment
- Identification of incentives for specific target groups
- Enhance policies for agriculture technologies adoption

3.1.7 IDO 6: Policy reform removing constraints and incentivizing rural households to engage in more sustainable practices that intensify and improve resilience

Conditions for research

- Involvement of government, unions and the private sector in the definition of the research agenda
- Review of the government existing agenda for integration
- Proven technologies to influence policy makers

Priority research areas

- Research on context for implementation for agriculture innovations
- Access to funding (credit)
- Land reorganization (fragmentation, water, comparative studies, property rights, innovative farming packages)
- Incentives for intensification and sustainability
- Research on rural development approaches (top-down, bottom-up)
- Migration and urbanization
- Existing and needed policies to support adapted agricultural education programs
- Cross-cutting issues :
 - Gender and youth
 - Who benefits and who loses (target groups)

Principal research outputs

- Overview of historical policies and the impacts they had in their agricultural sectors (enabling environment)
- Overview of policies addressing specific youth needs and recommendation on policies for youth empowerment.

Remarks and clarification

- The government has been involved in the programme right from the beginning.
- Subsidies work but they are costly. SMART subsidies is what is now working
- Market linkages comes upfront when conducting market analysis
- The outputs are not measurable or SMART.

4) PUTTING THE PROGRAMME INTO ACTION: CONTEXTUALIZING THE REGIONAL PLANS

This step built on the discussions in the regional realities and the IDOs to bring out the changes required in the regions, using the more generic model. It also brought out actions required to make it work in each region. The participants used the guidelines in the box below to achieve these outputs.

1. What do you want to achieve in the 1st, 2d and 3rd year cycles -> realistic milestones?
2. What are the Key activities you need to achieve the IDO research outputs?
3. Who will be your partners? How will you develop partnerships that deliver?
4. What capacity gaps do you see – capacity strengthening needs?
5. What support will you require from the global level?
6. How do you integrate cross cutting themes: gender and youth, bio-diversity and nutrition?

4.1 Central Asia and the Caucasus

What do we want to achieve in the first, second and third 3 years cycles:

- Baseline survey
- Establish partnership platform
- Inventory and Synthesis of previous experience
- Development M&E framework
- Capacity building
- Implementation of body projects and programs
- Monitoring and Evaluation
- Continuous update Data base
- Knowledge Management
- Joint implementation
- Improved capacity
- Sustainable IP
- Reduced vulnerability
- Sustainable use of land and water resources
- Increased Incomes and improved FS

What are the key activities we need to achieve the IDO Research Outputs:

- Regional outputs and activities reviewed against IDOs
- There are existing platforms for integrated use of the resources that would need to be reviewed in order to find solution i.e. “water conflicts within WUA”. Livestock should be integrated also.

- We should consider issues not only that are country specific, but regional
- Find linkages with other projects
- Farther to the visit to each action site we will develop Work plan with all stakeholders

Who we be our partners? How we will develop partnerships that deliver:

- Regional forum on AR4D
- Private sector: Need to formulate policies to facilitate integration of Private sector and other sector in development agenda

What Capacity gaps do we see?

- Needs assessments for each sector eg. rational use of water through the WUAs and cultural practices etc.
- Capacity development in M&E
- Training centers in the field action sites as pilot permanent demonstration sites
- E-learning, distance learning ECFS
- Linkages of PS and SC into capacity development programs
- Financial mechanisms for capacity building of land and water users and decision-makers

What support we need from the global level:

- We need to acquire knowledge on: modeling, data management
- Introduction and adopting of innovations, germplasm
- Regional and global knowledge, experience sharing

What support we bring to global level:

- Success stories - irrigation
- Lessons learned – how to combat salinity water logging

4.2 West African Sahel & Dry Savannas

What do you want to achieve in the 1st, 2^d and 3rd year cycles -> realistic milestones?

WAS&DS #	Activity cluster title	c1	c2	c3
1	Establish reference situation / baselines for the action sites to support systems approaches	x	x	x

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2	Assess and monitor biomass and resource flow in the action sites	x	x	x
3	<i>Review past work on dryland systems in the region and draw lessons on successes, failures and gaps in knowledge for sustainable intensification and vulnerability</i>	x		
4	Facilitate effective linkages and knowledge exchange among different actors for improved system productivity and better market access	x	x	x
5	<i>Quantify resource use and associated tradeoffs to optimize community-level decision making to promote SI and vulnerability reduction</i>	x		
6	Promote local and regional knowledge generation and exchange for scaling up and out of promising intensification options and strategies	x	x	x
7	Coordinate and harmonize database management and research methods	x	x	x
8	Induce intensification and improve resource use efficiency through on-farm testing and evaluation of technologies	x	x	x
9	<i>Review, analyze, develop and test community-based strategies for resource management including land tenure, seed systems, conflict management, access to</i>	x		
10	Develop and test value adding strategies for post-harvest management, processing and use of agricultural produce and by-products including forest product	x	x	x

What are the Key activities you need to achieve the IDO research outputs?

WAS&DS #	Activity cluster title	IDOs
1	Establish reference situation / baselines for the action sites to support systems approaches	All
2	Assess and monitor biomass and resource flow in the action sites	4
3	Review past work on dryland systems in the region and draw lessons on successes, failures and gaps in knowledge for sustainable intensification and vulnerability	All
4	Facilitate effective linkages and knowledge exchange among different actors for improved system productivity and better market access	3,5,6,7
5	Quantify resource use and associated tradeoffs to optimize community-level decision making to promote SI and vulnerability reduction	2,4,7
6	Promote local and regional knowledge generation and exchange for scaling up and out of promising intensification options and strategies	6,1,3,7

7	Coordinate and harmonize database management and research methods	All
8	Induce intensification and improve resource use efficiency through on-farm testing and evaluation of technologies	4,1
9	Review, analyze, develop and test community-based strategies for resource management including land tenure, seed systems, conflict management, access to	7,6,5
10	Develop and test value adding strategies for post-harvest management, processing and use of agricultural produce and by-products including forest product	3,1

Who will be your partners? How will you develop partnerships that deliver?

- NARS, NGOs, CSOs, FOs/CBOs, private sector, academia, ARIs, decentralized governments, etc. (dynamic)
 - Activity-specific
 - Site-specific at a district level
 - Priority to national partners of West Africa
 - ARIs and international NGOs / private sector will also be involved
- Effective delivery will be ensured through:
 - Innovation platforms and participatory action researcher
 - Independent, project lifetime M&E system connecting within the innovation platforms
- Note: FARA/SSA-CP needs to be included in the list of partner CGIAR centers for WAS&DS

What capacity gaps do you see - capacity strengthening needs?

- Note: like for IDOs, capacity building is inherent and built within each WAS&DS activity cluster
- Note: the whole pyramid of capacity gaps & needs across stakeholders has to be formally identified through a participatory process (to be elicited by the IPs, including expert backstopping – e.g. YPARD, ...)
- Scientists & academia:
 - (complex) systems thinking, analysis, modeling (incl. training curricula)
 - Communication skills and participatory approaches to engage with farmers (and policy makers) in a bottom-up R in D process
 - Crowdsourcing and new methods for mass data generation and analysis (uncertainty, scaling, ...)
- Smallholders, extension & advisory services:
 - Entrepreneurship, business development and management skills
 - IT-based media tools and support
- All stakeholders:

- Scenario visioning, foresight (contrasted experience among countries)

What support will you require from the global level?

- A final, agreed-upon global log frame
- Adequate funding and timely disbursement mechanisms cognizant of WAS&DS seasonality
- Backstopping for data management and provision (cloud, large datasets, imagery ...), and for quantitative and qualitative research methods (including modeling)
- Communication and harmonization of documents and methods across DS regions
- Mechanisms and logistics for transfer of analogue knowledge and experience across and within DS regions (vertical farmer exchanges, long-distance visits,)

What will you bring as a region to the global level?

- Large biophysical and socio-economic heterogeneity, experience & expertise evolved thereof
 - Warmest rain-fed agricultural region of the world (and resulting local expertise and knowledge)
 - Adapted action transect & monitoring system design with nested network of contrasted and complementary action districts and communities sampling the SRT2-3 continuum
 - Balanced background of institutional backgrounds (anglophone / francophone) with contrasted governance & decentralization processes
- More than a decade of participatory action research and experience in the field
 - World center of diversity for crops and (agri)-cultural practices with high farmer expertise levels (production systems relatively isolated from exogenous influences)
 - Strong and responsive civil society organizations (farmer networks & organizations)
 - Network of functional IPs and other R&D infrastructures

How do you integrate cross cutting themes: gender and youth, bio-diversity and nutrition?

- By integrating the thematic expertise of stakeholders and their feedback through innovation platforms and participatory action research
- By focusing on the district level as a 'systems integrator'
- By ensuring geographical and thematic leveraging of other CRPs (already happening with CCAFS, DC,CRP6)

4.3 NAWA Region

IDOs	Outputs	Activities	Sub-activities	Partners	Budget
<p>1. NARES use tools, methods and processes to generate and customize improved intensification options for targeted groups of intensifiable HH</p>	<p>Output 2.2. Rainfed mixed wheat-based system are profitably and sustainably intensified and diversified through integrated crop-vegetable-tree-livestock TIPOs in the action and satellite sites</p>	<p>Activity 1.1. Establish the baseline, monitor the characteristics and analyse yield gaps for rainfed mixed wheat-based system in target sites</p> <p>Activity 1.2. Design and test integrated options for productivity improvement for rainfed mixed wheat-based system in target sites.</p> <p>Activity 1.3. Promote the conjunctive use of available ground and surface waters with rainwater in supplemental irrigation and cash crops..</p>	<p>Activity 2.2.1. Establish the baseline and monitor the characteristics of the rainfed mixed wheat-based system in target sites</p> <p>Activity 2.2.2. Analyze yield gap of wheat and design and test integrated options for productivity improvement in the action site</p> <p>Activity 2.2.3. Establish and strengthen conservation agriculture based farming system in Meknès and RKB sites</p> <p>Activity 2.2.4. Improve the sustainability of the wheat cropping system through better integration of legumes, forages, and dual purpose crops in target sites</p> <p>Activity 2.2.5. Evaluate the system of olive intensification and the</p>	<p>Key NARES, Universities, Farmers, Farmers Associations, private and professional associations, WUA</p>	

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			<p>MGP strategy of converting the rainfed cereal system into olive cultivation in the action site</p> <p>Activity 2.2.6. Optimize crop livestock integration in the CA based wheat production system in Meknès and RKB sites</p> <p>Activity 2.2.7. Promote the conjunctive use of available ground and surface waters with rainwater in supplemental irrigation and cash crops in the summer in Morocco and Iran.</p>		
	<p>Output 2.3. Irrigated production systems sustainably intensified by optimizing water and land productivity while conserving and valorizing natural resources (land, water, biodiversity) in the Delta-Egypt and Karkheh River basin</p>	<p>Activity 2.1. Establish the baseline and monitor the characteristics of irrigated production systems in target sites</p> <p>Activity 2.2. Develop, test and evaluate irrigation packages to improve land and water productivities</p> <p>Activity 2.3. Improved irrigation water management for sustainable mountain</p>	<p>Activity 2.3.1. Establish the baseline and monitor the characteristics of irrigated production systems in target sites</p> <p>Activity 2.3.2. Develop and test irrigation packages to improve land and water productivities in the Nile Delta, Karkheh River Basin and Meknès</p> <p>Activity 2.3.3. Evaluate alternative cropping patterns for improved economic water</p>	<p>Key NARES, Universities, Farmers, Farmers Associations, private and professional associations, WUA</p>	

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		<p>agriculture</p>	<p>productivity under irrigation in the Nile Delta and the Karkheh River Basin</p> <p>Activity 2.3.4. Evaluate and test options for controlling and managing salinity in irrigated farming systems of the Nile Delta, and lower Karkheh River Basin.</p> <p>Activity 2.3.5. Improved irrigation water management for sustainable mountain agriculture in Lebanon, Morocco and Jordan</p>		
	<p>Output 2.4. Harvest and post-harvest practices improved, and added-value options tested for better market access in the three target sites</p>	<p>Activity 3.1. Analyze the value chains of vegetable and olive for enhancing market access to small holder.</p> <p>Activity 3.2. Develop and evaluate improved harvest and post-harvest technologies for improving value addition and market access.</p> <p>Activity 3.3. Develop</p>	<p>Activity 2.4.1. Analyze the value chains of vegetable and olive for enhancing market access to small holder farmers in Meknès site</p> <p>Activity 2.4.2. Develop and evaluate improved harvest and post-harvest technologies for improving value addition and market access for vegetables and olive in Meknès</p> <p>Activity 2.4.3. Analyze the value chains of cash crops</p>	<p>Key NARES, Farmers Associations, Industries, Regional Fora.</p>	

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		community led advisory services for small holders producers including crop production, post-harvest and market access in the target sites	for enhancing market access to small holder farmers in Nile Delta site Activity 2.4.4. Develop and evaluate improved harvest and post-harvest technologies for improving value addition and market access for cash crops in Nile Delta and Karkheh Activity 2.4.5. Develop community led advisory services for small holders producers including crop production, post-harvest and market access in the target sites		
	Output 2.7. Models and knowledge management systems developed and applied for optimized systems design, and scaling up/out improved Integrated TIPOs	Activity 4.1. Develop and demonstrate integrated decision support system Activity 4.2. Identify opportunities and potential niches for out-scaling intensified agricultural systems through remote sensing/GIS, yield-gap analysis Activity 4.3. Develop and	Activity 2.7.1. Develop and operationalize a conceptual system modeling framework from field to sector Activity 2.7.2. Select and operationalize appropriate sub-models to address the various components of the systems (crop, tree, livestock...) Activity 2.7.3. Use farm sector models for optimizing the farming	Key NARES, Universities, Policy makers, Advanced Research Institutes (ARI), Regional Fora.	

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		test knowledge dissemination and sharing mechanisms.	system Activity 2.7.4. Develop appropriate regional bioeconomic models to assess outscaling opportunities Activity 2.7.5. Identify opportunities and potential niches for out-scaling intensified agricultural systems through remote sensing/GIS, yield-gap analysis Activity 2.7.6. Assess existing knowledge, communication, and learning systems in the areas of sustainable intensification in the target communities Activity 2.7.7. Manage and disseminate knowledge and approaches developed in the target sites		
	Output 2.8. Trade-offs between systems intensification, diversification and resource use and conservation analyzed and sustainability	Activity 5.1. Analyze tradeoffs amongst resource conservation technologies, crop-livestock integration and intensification options	Activity 2.8.1. Adapt and/or develop and utilize modeling tools for tradeoffs analysis at field, farm and site scales Activity 2.8.2. Analyze	Key NARES, Universities, Policy makers, Advanced Research Institutes (ARI), Regional Fora.	

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	scenarios developed in the target sites	<p>Activity 5.2. Determine the optimal land and water use and diversification options for different household types</p> <p>Activity 5.3. Develop and simulate scenarios for a range of agricultural development trajectories in interaction with innovation platforms and policy makers.</p>	<p>tradeoffs amongst resource conservation technologies, crop-livestock integration and intensification options</p> <p>Activity 2.8.3. Determine the optimal land and water use and diversification options for different household types</p> <p>Activity 2.8.4. Develop and simulate scenarios for a range of agricultural development trajectories in interaction with innovation platforms and policy makers</p>		
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IDO's	Outputs	Activities	Partners	Budget
2. NARES use tools, methods and processes to generate and customize improved resilience options for targeted groups of vulnerable HH	Output 2.1. Integrated socio-economic and biophysical baseline data established and regularly updated for monitoring and tracking the dynamics of the systems and program outcomes	<ul style="list-style-type: none"> - develop and test metrics, methods, models and tools to measure resilience - Establish a gender disaggregated baseline data and monitor the trends on the socio-economic and biophysical indicators for monitor system and livelihood dynamic, outcomes program interventions 		

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IDOs	Outputs	Activities	Partners	Budget
	<p>Output 2.2 Adapted technological, institutional and policy options (TIPOs) for reducing vulnerability of the barley–sheep production system developed and implemented</p>	<ul style="list-style-type: none"> - Diagnose and document causes of vulnerability of the system, local KNOWLEDEGE ABOUT RESILIENCE STRATEGIES with due attention to gender -Analyze the role of non-agricultural activities and markets for resilience - Identify, develop and test technology, institutional and policy options on pastoral, crop-livestock-rangeland systems integration for more resilient livelihoods - Develop and promote a well-functioning seed system. - Improve small ruminant productivity - Test and disseminate drought, salt tolerant and dual purpose improved cultivars and management options of barley crop - Assess water harvesting & supplemental irrigation techniques, water saving and management in the target 		

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IDOs	Outputs	Activities	Partners	Budget
		<p>production systems</p> <ul style="list-style-type: none"> -develop techniques for the use of saline water - Identify, develop and test technology, institutional and policy options for better water and land management to enhance resilience taking into consideration gender dimension - Identify, develop and test technology, institutional and policy options for value addition and alternative sources of income - Establish, monitor and evaluate strategic innovation platform for reducing vulnerability of the agro-pastoral system in the target sites - Evaluate impacts of land tenure and property rights policies on pastoralists livelihoods and rangeland ecosystem maintenance in the action & satellite sites - 		

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IDOs	Outputs	Activities	Partners	Budget
	<p>2. Output 2.3 technology, institutional and policy options for conservation and sustainable use of agro-biodiversity and livelihoods diversification identified, developed and tested</p>	<p>3. -Assess the status and threats to local agro-biodiversity (plant, animal and micro-organisms)</p> <p>- Assess the indigenous knowledge including the role of gender in agro-biodiversity management, use and conservation</p> <p>4. - Identify, develop and test technology, institutional and policy options for conservation and sustainable use of agro-biodiversity and livelihoods diversification with due attention to gender sensitivity</p> <p>- Evaluate the trade-offs of different options for resource use and for reducing vulnerability and managing risk in the target communities</p> <p>-Facilitate out and up scaling of proven TIPOs</p>		

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IDO's	Outputs	Activities	Partners	Budget
	5. Output 2.4 Capacity of all stake holders developed	6. Enhance capacity of stakeholders for innovation and effective participation in collaborative R4D processes		
	7. Output 2.5 Impacts of interventions assessed	- Analyze the ex-ante and ex-post gender-differentiated social, economic and environmental impacts of selected risk reducing interventions on the livelihoods and vulnerability of systems (both households and their limited resources) disaggregated by gender		
3. NARES and health sector organizations work together and adopt diagnostic and systematic research approaches to promoting and	Output 2.6. Effective mechanisms for rural women and youth empowerment developed and tested in the 3 sites, to equitably share benefits and responsibilities of aggregation and intensification	<ol style="list-style-type: none"> 1. Baseline: current level of current nutritional status and food availability (year 1) 2. Qualitative and quant assessment of constraints and opportunities Assessment of potential needed interventions 	Dev., research, Extension Universities, universities, Women's associations/ coopetratives, and NGOs, in Morocco Egypt	

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IDOs	Outputs	Activities	Partners	Budget
<p>developing intervention to improve vulnerable women, men and children access to, and control of, more and more diverse food sources, throughout the year</p>		<p>(year 2)</p> <p>3. Refine available indicators and develop new ones on empowerment (year 2)</p>	<p>Iran</p>	
	<p>Output 1.5. Gender-specific options for income diversification & risk management for vulnerable households in the target sites</p>	<p>1. Capacity building in processing post-harvest products through the introduction of innovative post-harvest technologies for better market access and safe and better quality food</p> <p>2. Promotion and cultivation and herbal and medicinal plants, and documentation of traditional of their uses</p> <p>3. Raise public awareness for healthy and balanced diet (crops, livestock and biodiversity products) for ensuring food safety over the year</p> <p>4. Introduction of small scale livestock activities/ production and dairy production</p>	<p>Dev., research, Extension Universities, universities, Women's associations/ cooperatives, and NGOs, in</p> <p>Syria</p> <p>Tunisia</p> <p>Jordan</p> <p>Lebanon</p>	

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IDOs	Outputs	Activities	Partners	Budget
<p>4. Multiple stockholders in pastoral/agropastoral areas, use evidence based ecosystem management at community level in the governance of common and privately managed land and water resources</p>	<p>Good governance of the natural resources</p>	<ul style="list-style-type: none"> - Identify policy and institutional interventions to reduce the vulnerability of barley-sheep production system - Establish, monitor and evaluate an organizational innovation cluster (CBOs of rangelands) - Develop policy options for ground water use management (pricing, quotas, communal management, ...) - Evaluate impacts of land tenure and property rights policies on pastoralists livelihoods and rangeland ecosystem maintenance in the action & satellite sites 	<p>All stakeholders</p>	
	<p>Technologies packages for sustainable use of livestock vegetation, land and water resources</p>	<p>- Options for improving rangeland-livestock system resilience, livelihoods of agro-pastoralists and natural resources conservation developed</p> <ul style="list-style-type: none"> - Establish, monitor and evaluate commodity-innovation clusters (sheep, cactus, medicinal and herbal plants, small scale dairy processing) - Test and disseminate drought tolerant and dual purpose improved cultivars and management options of barley crop - Improve small ruminant productivity - Test, improve and promote ways of enhancing agro-pastoral communities know-how for adapting to climate variability, soil degradation and water scarcity - Assess water harvesting & supplemental irrigation techniques, water saving and management in the target production systems - Design and implementation of improved water 	<p>All stakeholders</p>	

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		<p>harvesting/conservation systems in the mountains areas</p> <ul style="list-style-type: none"> - Development and dissemination of innovative supplemental irrigation management in rainfed olive growing - Improve the productivity of small ruminants in the pastoral and agro-pastoral production system 		
	<p>Models, tools and knowledge management systems developed and applied for optimized systems design, and scaling up/out improved Integrated TIPOs</p>	<ul style="list-style-type: none"> -Establish, monitor and evaluate strategic innovation platform for reducing vulnerability of the agropastoral system in the target sites - Establish, monitor and evaluate an intervention innovation cluster (water harvesting and use) - . Conduct quantitative analysis of the determinants of livelihoods and systems performance. - Develop new approaches for monitoring and assessing communal rangeland degradation 	All stakeholders	
	<p>Ecosystem services quantified</p>	<ul style="list-style-type: none"> - Assess options for new income generating activities to improve households' livelihoods - Income generation for payment environmental services (PES) 	All stakeholders	
	<p>Integrated socio-economic and biophysical baseline data established and regularly updated for monitoring and tracking the</p>	<ul style="list-style-type: none"> - Establish a baseline data on the socio-economic and biophysical indicators for monitor system and livelihood dynamic, outcomes program interventions - Through regular surveys establish monitoring of system and livelihoods dynamics using selected indicators, - Analyze the ex-ante impact of selected risk reducing interventions on the livelihoods and vulnerability of systems (both households and their limited resources) 	All stakeholders	

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	dynamics of the systems and program outcomes	disaggregated by gender		
	Capacity development	<ul style="list-style-type: none"> - Train the trainers - Enhancement of research quality (experimental design and analysis) - Modeling - Data archiving, sharing and networking - Productivity gap analysis, geo-informatics - Standardization of the feed analysis, natural resources assessment and monitoring 	All stakeholders	

5. More integrated, effective and connected service delivery institutions underpinning system intensification and resilience	Output 2.1. Innovation platforms for technology transfer, access to market, credit and insurance are developed and operational for the implementation of farmer's aggregation approach, associating small farmers with pilot progressive farmers and/or private investor in Meknès and Delta-Egypt target sites	<p>Establish, monitor and evaluate strategic innovation platform for reducing vulnerability of the agropastoral system in the target sites</p> <p>Establish, monitor and evaluate an innovation clusters (water harvesting and use, medicinal and herbal plants, fruit trees value-chains</p> <p>Establish and evaluate the farmers' aggregation approach in the cereal-based production system</p>	<p>IFAD-PRODESUD Tunisa, IRA, Aga Khan Foundation, Arab Fund, WLI/USAID, Hachemite Fund for Badia, INRA Morocco, Green Morocco plan, MENARID project Morocco, OCP, New KRB Project,</p>	
	Output 1.1. Functional innovation platforms established for the design and transfer of improved	<p>Develop irrigation management support systems</p>		

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	R4D options in target sites	Review water use policies and evaluate options of ground water use and their impacts on resource use efficiency and livelihoods		
6. Policy reform to remove constraints and improve incentives to rational management of natural resources	Output 2.9: Impact of the R4D monitored and future scenarios developed for the target action and satellites sites			
	Output 1.6. Trade-offs amongst options for reducing vulnerability and risk mitigation analyzed to develop adapted coping strategies and optimized systems design, and scaling up/out improved integrated TIPOs			
	Output 1.7: Impact of the R4D measured and future scenarios developed for the target vulnerable areas			
7. Farmers and pastoralists (especially women) have better access to more diverse, efficient and equitable	Output 2.5. Policy and institutional options related to farmers' aggregation, market and value chain integration, land			

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markets	fragmentation, water valuation and allocation evaluated in the 3 target sites			
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4.4 Eastern and Southern Africa

Participants: Africa Harvest, Mozambique IIAM, ICARDA Legumes, ICARDA Addis, CIAT Malawi, ICRISAT Nairobi, Coordinator, Dept Agri Malawi, IWMI Pretoria, ASARECA, Zimbabwe

Who attended previous planning session? 2

IDO 1 (more stable, higher income)

What do we want to achieve in the next 18 months, to come up with some concrete outputs?

Focus on diagnostics ...

- Identify, for action sites, which are the intensifiable households, based on theoretical framework
- Identify, for each action site, where each Center and Partner is now working
- Draw lessons learnt from interventions that have had income impacts (e.g. since 8 yrs SSACP / 4000 households monitored since 5 yrs; Africa Harvest productivity-enhancing to market dryland cereals, horticulture; SIMLESA Mozambique baseline value chain, groundnuts value chain)
- Review value chain analyses (which includes analysis of partners along the chain) done and identify intervention points for the action sites

What do we want to achieve in the 2nd round, 2015-17?

- Identify and make use of most suitable technologies and practices for sustainable intensification for more productive, profitable and diversified dryland agriculture.
- Be clear about how to scale out within the action site, including assessment of process, market potential etc.

Who will be our partners?

- Partner with on-the-ground NGOs like Catholic Relief Services etc.
- Private sector actors (e.g. processors)
- Government agencies
- Check we have approaches/tools to evaluate motivation, strength of partners (e.g. do they really cover the ground/households they claim?)

IDO2 More resilient vulnerable households

- Focus on diagnostics & consider looking at non-traditional/indigenous crops and livestock (camel markets)
 - Draw lessons learnt for methods, tools to measure resilience & develop simpler versions (rapid assessment tools) and M&E

- Status and Trends of the resource base and the role of assets in resilience assessed
- Perceptions, knowledge about resilience strategies diagnosed and documented
- Understand better role of non-agri activities and markets for resilience
- For existing/promising technologies (what is working, including traditional/local systems), technology, institutional and policy options on systems integration for more resilient livelihoods identified, developed and tested (testing takes min 3 years, before adoption is realistic)
 - We can start with testing
- Build strategic partnership to deliver

What do we want to achieve in the 2nd round, 2015-17?

- Technology, institutional and policy options on systems integration for more resilient livelihoods identified, developed and tested
 - Will include conservation & sustainable use of agro-biodiversity, water & soil mgt, value addition & alternative sources of income)

Who will be our partners?

ID03 women, children vulnerable households access to more food

What do we want to achieve in the next 18 months, to come up with some concrete outputs?

- Watch out: increased income does not necessarily lead to better nutrition & fair distribution among household
- Relevant to both action sites
- Do baselines and listen to the communities (who have their own ideas ...)

What do we want to achieve in the 2nd round, 2015-17?

- Educational activities and outputs,
- Greater access via home gardening with new varieties, school gardens

Who will be our partners?

- Min of Health

ID04 sustainable land & water management rangelands

What do we want to achieve in the next 18 months, to come up with some concrete outputs?

- Establish definitions, metrics, including community-based assessments of governance (including conflicts and resolution potential; comprehensive assessment of land-related issues), key ecosystem services (are they feasible?)

4.5 South Asia

South Asian DS-DOs, outputs and activities

DOs	Activities	Outputs
1, 2	Baseline survey, soil sampling, biomass estimation....	Household (HH) livelihood assets, production systems and capacity to intensify assessed quantitatively and HH livelihood and production strategies understood
1, 2	Evaluation of selected NRM options for their performance in terms of enhancing resilience ecosystem services.	NRM options identified and documented
1 and 2	Testing, demonstrating identified NRM options for productivity enhancement and resilience building	On farm demonstration sites established for marginal and potential areas
4	Identification and evaluation of NRM and institutional options for pastoral and agro pastoral systems (2013/14)	Key land and water management options in the pastoral and agropastoral areas identified and major institutional and biophysical bottlenecks for sustainable uses understood
4.1	Piloting NRM option in pastoral and agro pastoral areas	Selected NRM options for their performance in terms of enhancing production capacity and providing ecosystem services piloted and demonstrated in a representative systems
5	Undertake market survey and surveillance	Existing farmers market options, networks and bottle necks assessed;
5.1	Enhancing the capacity of different stakeholders to understand and negotiate	Mechanisms to improve farmers access to market information, knowledge, network identified and farmers capacity built
6	Assessing the bottlenecks for implementing the convergence and pilot testing of the enablers promoting the convergence	Institutions, partnerships and their effectiveness in terms of service delivery for system intensification, resilience and collective actions understood, tested and piloted
7	Establishment of custom institutional and policy and technologies innovation centres	Existing policies, institutions, actors documented and architecture for the platform,

IDOs	Activities	Outputs
7.1	Inventory of existing policies and bylaws and vulnerable community segment (2013).	agreement on TOR for their role and contribution reached
7.2	Mapping of the actors involved and their roles for operationalizing the specific system approach for the target Eco region.	
7.3	Team building workshops to internalize the objectives, approach and the goal for the system's approach.	
7.4	Identifying the enabling policy support mechanisms and incentives promoting convergence identify and provide need based capacity building for actors.	Policy reviewed and documented and evidences used on policy makers workshop
7.5	Documenting and preparing policy briefs.	
7.6	Conducting policy makers workshop to share and disseminate the policies enabling convergence	

Partners

Global Level

- Universities – Texas and Reading
- CGIAR institutes

Regional

- SAARC
- CSISA

National -India

- NARS in countries
- India – ICAR (CAZRI, CRIDA, IGFRI).
- SAUs (ANGRAU, UAS (D), RAU
- NGOs – GRAVIS, RDT, BAIF, Vishala

National- Pakistan

PARC, BARI, SAWCRI, Baron Agricultural University

National-Afghanistan - Agricultural Research Institute

National- Bangladesh – BARC, Bari, Bina, Hazi Danish University, NGOs

Capacity gaps

- Research skills
- Women and youth empowerment skills
- Nutrition
- Market intelligence
- Post-harvest processing and value addition

Support required from global level

- Knowledge sharing/technology sharing
- Germplasm exchange
- Specialized trainings

What can the region give to global level

- Knowledge and technologies
- Good policies
- Genetic resource

Integrating cross-cutting themes

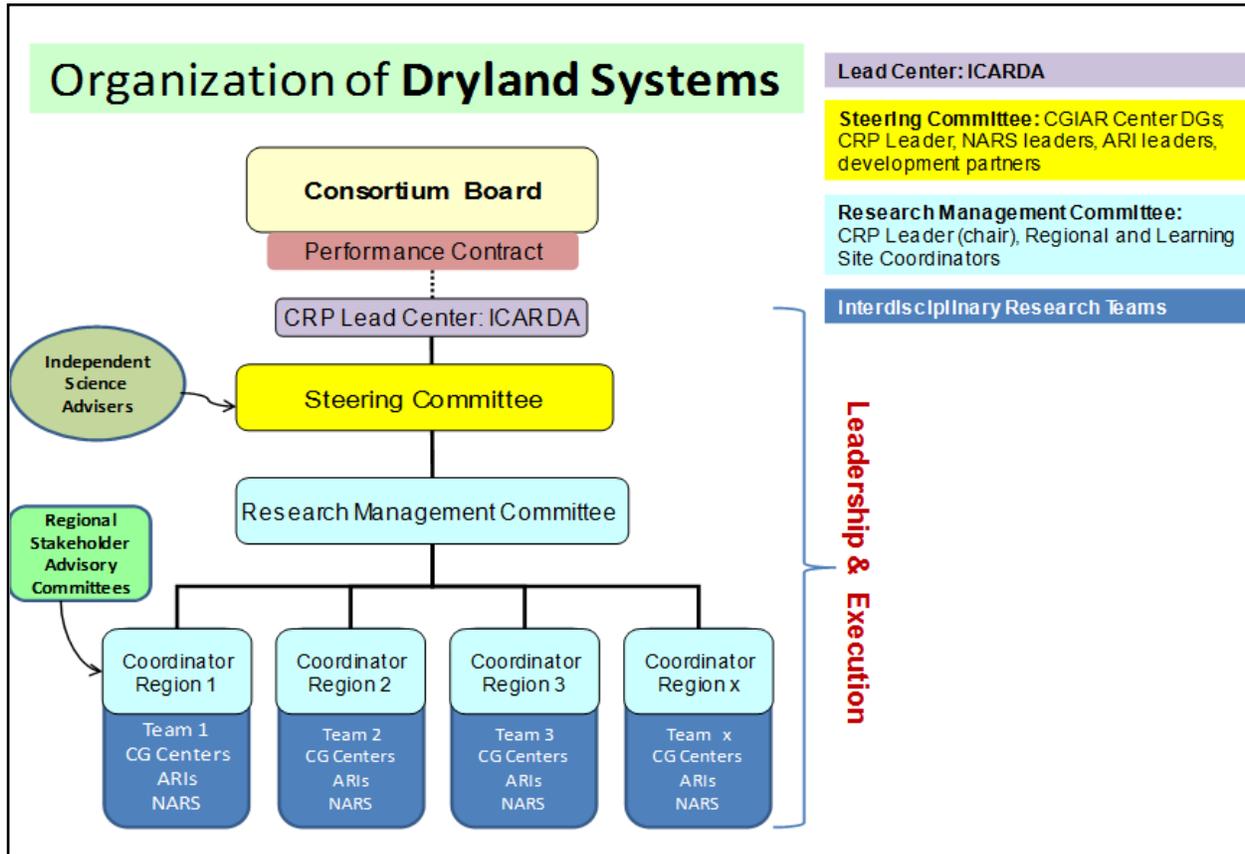
- Integrated Farming systems approach
- Farm mechanization through custom hiring involving youth
- Involvement of women SHGs at all levels
- Post-harvest processing and value addition

Remarks and clarification

Question: what is the planning period?

Response: The achievement of the IDO ranges between 9-10 years. There are phases which will be renewed in a three years cycle.

5) GOVERNANCE AND MANAGEMENT



- Lead Center: responsible for governance, fiduciary oversight and financial management through contract with Consortium Board
- Steering Committee (SC): provide strategic oversight, responsible for direction, monitoring, and resource allocation. SC chaired by DG of Lead Center. Other members include representatives of:
 - 3 CGIAR partner centers: ICRISAT, ILRI, and World Agroforestry Center
 - 2 advanced research institutions (rotating): Agropolis (FR) and Commonwealth Scientific and Industrial Research Organization (AU)
 - National-system representatives (rotating): Global Forum on Agricultural Research /Forum for Agricultural Research in Africa, Ethiopian Institute of Agricultural Research, Indian Council of Agricultural Research, and Institutional de recherche agronomique (MO)
 - 3 development agencies (rotating): FAO, IFAD, and Howard G. Buffett Foundation
 - Dryland Systems CRP Director

Steering Committee (SC): Role in Intermediate Development Outcomes (IDO)

- SC will be involved in IDO across Target Regions.

- This will contribute to coherence of IDO implementation across Target Regions.
- One SC member for each IDO as its Focal Point will take responsibility for helping guide IDO implementation across the Target Regions.
- This SC member can be from any one the membership of the SC, CGIAR-associated or not.
- The Research Management Committee can invite any of the SC IDO Focal Points when the respective IDO is on the RMC agenda.

Research Management Committee (RMC):

- Responsible for overall coordination and management of research agenda.
- Chaired by CRP Director, and consist of coordinators of interdisciplinary research teams (IRT) for each Target Region.
- Management of human resources, finances, and administration by RMC in communication with partner organizations in each IRT.
- Develop and propose medium-term and annual work plans as requested by the Steering Committee; these will be reviewed and approved by Steering Committee.
- Engage with Regional Stakeholder Advisory Committees (RSAC) to ensure productive exchange of ideas with potential end users.

Independent Scientific Advisors (ISAs)

- Each Strategic Research Theme (SRT) will have standing panel of four part-time ISAs, reporting to Steering Committee.
- World-class scientific experts on each SRT.
- Provide advice and suggestions on relevance and quality of proposed and ongoing research.
- May suggest amendments to research agenda.
- May recommend conducting comparative analyses of SRTs across regions and to assess integration of SRTs within regions.
- May also give advice on trends and emerging issues relevant to CRP, and potential strategies for addressing them.

CRP Director

- Appointed by the Lead Center in consultation with the Steering Committee.
- Provide crucial leadership role in the R4D agenda, with Steering Committee and RMC.
- Duties include:
 - Daily management aided by small management office
 - Ensure agreed outputs are achieved.
 - Ensure timely and high-quality reporting to Steering Committee and Consortium Board through DG of Lead Center.

- Public representative of Dryland Systems, with the Steering Committee, ensures high and positive profile with investors & public.
- Lead resource mobilization efforts, partner and donor relations, and relations with RMC and RSACs.

Regional Coordinators (RC)

- RCs of interdisciplinary research teams coordinate each Target Region.
- Part-time appointments and continue to be affiliated with their home institutions.
- Ensure that activities in each SRT are effectively implemented, coordinated, cross-informed, delivered, and monitored/assessed.
- Maintain strong relationships with CRP Director and partner institutions, donors, and stakeholders in each Target Region.

Regional Stakeholder Advisory Committees (RSAC)

- Provide a channel for input and dialog with RMC and SC.
- Comment on relevance and effectiveness of partnership arrangements.
- Advise and facilitate reaching policy- and decision-makers.
- Appointed by SC to address priority needs and knowledge gaps.
- Representative of intended users of CRP outputs in each Target Region. Mix of constituencies covering policy, public research, development, NGOs, CSOs, and community-based organizations, and land users.
- Stay in frequent contact with respective RCs, who will ensure that stakeholders' views are continuously shared with RMC.

Remarks and clarifications

- There are so many meetings. There is great importance of involving different stakeholders.
- Looking at the membership of the CG centres and the management structure; other CG centres are locked out from the committees. There is need for rotation of members in the steering committees to accommodate other partners.
- As it was, the committee was formed by coordinating centres in the different regions. However, the coordination of the IDOs will be flexible and will be accommodative of all partners ensuring coherence across the regions. The coordination of IDOs should not be with the CG centres.

Question: What is the importance of integrating cross cutting themes to the proposal?

Response: The cross cutting issues are sometimes implied or hidden. They will therefore be implemented across the different themes. They are not being buried but will be integrated in all the activities.

Question: Who has the responsibility to ensure that cross cutting themes are integrated and implemented?

Response: It will be the responsibility of everybody in the committees. Specifically taking about Gender, there is an explicit part on management. A member of the board of the CRP with clear terms of responsibility will be designated to address these cross cutting them.

6) CLOSING CEREMONY

On behalf of WASA:

We are particularly happy with the process. It involved a lot of work. We were privileged to join the team in 2010. The learning processes we have gone through will enrich us at implementation level. WASA is heterogeneous with a solid team. The team have solidly contributed towards the process. We are confident the implementation process will go on smoothly and achieve the IDOs and Impact that CRPs are attempting to achieve. Finally he congratulated all the participants for bringing the CRP to this level and pledged solidarity in the next level

On behalf of Eastern and Southern Africa

The ESA were very excited to be party of the process that generated key outputs demonstrating the kind of research which will not be business as usual as usual. This is a very important process which will work towards the improvement of the livelihood of the beneficiary which is threatened by dwindling resources and changing climatic condition.

This process should be firmly founded on existing circumstances and not reinvent the wheel. The focus should thus be on quick wins to secure the confidence of the people. As a region, we are committed to work and create impact. We are committed to doing what can be done to mobilize resources.

On behalf of NAWA

Scarcity of natural resources has deep impact on agriculture and food security. The geo-political dimensions for the region should be addressed. Setting up a new vision for the development of agriculture in the region is one of the challenges. In this highly challenging context, we highly congratulate ICARDA and all the partners for the launch of CRP and hosting of the CRP. NAWA is committed to engaging resources for successful implementation of the process. On behalf of the participants from the region, thanked ICARDA and everybody for making the process a success.

On behalf Central Asia

Sometimes we underestimate the role of governments in implementation. We need to involve civil servants and corresponding ministries in the process. The consortium needs to send a letter to the respective government to highlight the importance of CRP.

CRPs should focus more on development of remote farming in addition to the management of mountainous agricultural zones. However, global warming is affecting agricultural zones. The CRPs should focus on impact of global changes and increasing research potential. Subsequently building the capacity of young scientists and personnel should be a major focus.

On behalf South Asia

Food insecurity as a result drought and unpredictable climate change is a serious problem in the region. South Asia is very rich and can be a source of solution. What is highly needed is scientific and political will to welcome CRP1.1. This process can be strengthened through collaboration between the different regions. Systems approach should involve the integration of all the cross cutting interdisciplinary and sciences approached.

On behalf of ARI

CRP 1.1 is very important as it integrates institutional, conceptual, and societal systemic approaches. Institutional approach builds on the CG reforms which creates synergy and creates difference. Conceptual approach brings a shift in thinking. There will be need for more resource based on the need to define the content of the research. Research is no longer a top-down approach. The success of the CRP is highly depended on the synergy between stakeholders linking natural resource management; ecological issues, water management, and food security are some of the issues that should be addressed.

On behalf Regional Fora

This programme addresses very difficult issues on different parts of the world. The project approach which created a platform for bringing all stakeholders in a harmonized and integrated partnership will create a more efficient and effective sustainable coordination mechanisms to make the changes in the farmers and local communities viable. As a regional fora, we are ready to work in partnership with you to be able to effectively communicate with members and make the real change in the lives of people and save them from poverty. Finally, he thanked ICARDA and CG centres for their contributions towards making this process a success and all the partners for taking time to attend the meeting.

Dr. Adekunle, Director, Sub-Saharan Africa Challenge Programme

African challenge programme was the first CGIAR challenge programme coordinated by a non CG centre. Africa has its share of dry areas. It is based in Africa being an African programme. Africa also has its own share of dry areas and therefore the challenge programme is extremely important. The heterogeneity and complexity of Africa has plunged Africa into deep poverty. Therefore, linear equations have been known not to solve the problems in Africa. This programme is very important. The foundation determines the height of the super structure. If you are going very high, you must go very deep. The challenge programme trusts in the strength and capacity of the people involved in the CRP programme. ICARDA has worked hard at bringing the right people with the required expertise on board. We appreciate ICARDA and all the partners involved. FARA together with the challenge programme is ready to work in partnership to ensure the CRP1.1 programme becomes a success. We will work closely to ensure are linked to right market and their livelihoods improved.

On behalf of Non-Governmental Organizations

It is a great opportunity to bring on board the NGO fraternity to collaboratively brainstorm on the aspect of impact pathways. CRP1.1 is a very important programme for Africa due to the complexities of the continent. Africa has also great opportunities that can work towards creating impact globally. There are so many technologies that have been developed by the CGIAR centres that if innovatively disseminated can solve many problems for Africa. The solution lies in the CGIAR. The challenge is how these varieties are transferred. Analysis of the impact pathways is very important. Creating impact requires a change of mind-set. Researchers need to get out of their comfort zones in research. Technology dissemination requires a change in mind-set. People out there are hungry for technologies. The seed system is facing a major challenge. Seed multiplication systems and agronomic practices are areas that the programme should focus on. Market linkages is an area that requires change. Why are African countries importing products which they have the capacity to produce? African countries have their own market. What is required is defining innovative ways of finding the right market. Finally it is important to work with the large international NGO's but also identify local NGOs that work closely with the farmers.

On behalf of CGIAR

Everybody in the CG especially the scientists are very excited. The success of the CRP1.1 is effective and efficient co-learning process between the different partners. We need to learn both from best practices as well as failures. There is no need to fear making mistakes as long as we learn from them. We should be ready to work together, share, and learn from each other. Let us learn from the emerging surprises. We also need to build functional network that can help create the required impacts.

Dr Mahmoud Solh,

On behalf of ICARDA, Dr. Mahmoud thanked all the participants for their commitment and constructive contributions ensuring that all the objectives of the workshop were achieved. He also appreciated all the stakeholders for availing themselves in spite of the short time notice. The CRP1.1 has been building on the inception meeting within the regions. We are happy to finalize on the IDOs and subsequently drafting the regional action plans. The regional meetings will work towards defining clear roles for the different stakeholders. The regional workshop should clearly work towards defining how to achieve the IDO. During the steering committee meeting, it was good to see that it was all inclusive. We will also ensure that all the expertise in the systems approach will be availed in the different regions. Finally, Dr-Mahmoud thanked all the participants for attending the meeting, the Kingdom of Jordan for hosting the meeting, and all the partners for their support. The CGIAR will work closely with the policy maker to gather the necessary support required. ICARDA is committed to work collaboratively with the different partners to ensure the process becomes a success.