



DRYLANDS SYSTEMS

Integrated Agricultural Production Systems for Improved Food Security and Livelihoods in Dry Areas

Gender Strategy

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FOREWORD

This Gender Strategy has been prepared to comply with the CGIAR Consortium Office's formal requirement that each CGIAR Research Program (CRP) submit a gender strategy to the Consortium Office for approval. It respects the template given in the Consortium Gender Strategy (2011), and draws on the recommendations of the Consortium Office's Assessment of the Status of Gender Mainstreaming in CGIAR Research Programs (30 July 2013). Since the Dryland Systems (DS) Program was the last of the 16 CRPs to be approved by the CGIAR Consortium Board,¹ the Strategy's preparation benefited considerably from the other CRPs' experiences in developing and implementing their gender strategies.

At the same time, the preparation of the Strategy has proved an invaluable opportunity to engage in discussions with multiple stakeholders on ways of addressing gender issues in agricultural research for development (AR4D). The Strategy was developed through a participatory process involving representatives of the Program's stakeholder groups (CGIAR and national research system biophysical and social scientists and economists; governmental, civil society and UN policy makers and development practitioners; and representatives of farmers' associations and youth movements). They insisted that the Strategy should provide a **vision and commitment** to promoting gender equality within the Program's overarching **systems** framework that they underlined as essential to deliver on the objectives of the CGIAR reform process (particularly its 2011 Strategy and Results Framework), the Roadmap adopted by the Global Conference on Agricultural Research for Development (GCARD1, Montpellier, 2010), and the UN's Post-2015 Agenda.

A Gender Transformative Approach within an Overarching Systems Framework

This Strategy views gender from two *complementary* perspectives and goals: on the one hand, *equity* and *rights* issues and goals, and on the other hand, inspired by the CGIAR's Strategy and Results Framework, *efficiency* concerns to increase the probability of widespread adoption of agricultural innovations that strengthen the food security, nutrition and livelihoods of the populations dependent on dryland systems. These two perspectives call for intertwined development approaches, both of which are essential. As the World Bank (2011) affirmed:

“Gender equality is a core development objective in its own right. But greater gender equality is also smart economics, enhancing productivity and improving other development outcomes, including prospects for the next generation and for the quality of societal policies and institutions. Economic development is not enough to shrink all gender disparities - corrective policies that focus on persisting gender gaps are essential.”

The reasons for these intertwined approaches to gender are elaborated below.

The **first** reason is that as a *systems* program, the DS CRP takes a broad landscape approach on which it overlays the complex social systems which interact with the landscape and bio-agricultural systems. This means "unpacking" the social systems in each of the Program's Action Sites, and identifying different typologies of stakeholders differentiated by factors such as wealth, type of production, processing and market system, employment status, household structure, educational level, technical and entrepreneurial skills, ethnic and religious affiliation, with gender disaggregation crosscutting all these typologies. Inevitably, these typologies will

¹ Formally approved by the CGIAR Consortium Board in March 2013, the CRP was officially launched in Amman in May 2013.

expose wide disparities among groups, and between and among women and women, raising equity and rights issues. The CRP takes a dynamic perspective as bio-agricultural and social systems and the interrelationships between them are constantly changing in response to technological, economic, social, demographic, environmental, and political change processes, influenced by rapid globalization. While the Program cannot influence such broad change processes, its agricultural research for development (AR4D) activities will harness opportunities that these wider changes bring for different DS stakeholder groups, especially women, while attempting to avoid potential negative impacts of its AR4D program on the vulnerable, particularly women.

Second, the CRP cannot achieve its objective to improve food security and livelihoods in its Target Countries only by increasing productivity and output (i.e. the size of the "cake") but it will also need to engineer some redistribution so that vulnerable families and disadvantaged women capture a more equitable share of increased income, food and other benefits.

Third, the Program **focuses on the two disadvantaged groups for which the payoffs are likely to be the biggest: women and youth**. FAO's 2011 pioneering report showed that women represent 43 percent of the global agricultural workforce, yet they suffer a **huge gender gap in access to agricultural assets, inputs, services, new technologies, and markets which entails very substantial costs to their countries, communities and households** (FAO, 2011: 42). Evidence of the feminization of agricultural labor (but not asset holdings) in several DS Target Countries, especially in the West Asia and North Africa (WANA) Region, underlines the urgency of addressing these gaps. As with the other systems CRPs, the DS Program recognizes that the gender gap cannot be closed simply through policy, technological and institutional innovations, but requires a fundamental **transformation of gender relations, and the underlying norms, attitudes, values and practices that underpin these**.

Youth are also a critical target group, complementing that of women, for two main reasons: a) In today's globalizing world, typified by migration, urbanization, rising educational levels and aspirations, and the information technology and social media revolution linking rural youth to global information and change movements, our youth are increasingly frustrated by the lack of decent employment and living standards. The young, especially young women, face much higher unemployment rates than adults. Much of the political unrest and civil strife is being driven by such frustrated youth; (b) Rural youth are increasingly exiting agriculture, frustrated by the grueling and unrewarding life especially in marginal dryland systems, **raising serious questions as to how will these regions and countries will feed their future populations**. While these youth issues are addressed in the CRP's complementary Youth Strategy, young women often face special disadvantages (Levine *et al.*, 2008; Bertini, 2011) that will be addressed, as appropriate, in this Gender Strategy.

Fourth, the CGIAR reform process is predicated on the premise of "joined up thinking" that breaks down the disciplinary silos that have characterized so much of the AR4D hitherto. Thus this Gender Strategy is anchored in a determination not just to incorporate gender issues into ongoing and future biophysical and social science AR4D, but also to incorporate biophysical and social science issues into gender research. In other words, each discipline has as much to contribute as to learn from the others. This will require a **mind shift** among researchers, policy makers and development practitioners demanding an openness to "put on others' shoes", to

strive to see issues from different perspectives, and to develop innovative multi-disciplinary concepts and methods that break down the prevailing disciplinary silos.

The Gender Strategy

Conceived within this broad framework, this Gender Strategy is designed in a way that will enable CRP researchers and partner development practitioners to implement it in the broader development context, including the Program's complementary Youth Strategy. This is particularly important in view of the decision of the DS Steering Committee, at its second meeting in Addis Ababa, 16 September 2013, to adopt an Intermediate Development Outcome (IDO) on gender and youth. This IDO will enable the CRP to undertake strategic research on gender and youth issues, to support and inform the work on the other 7 IDOs in which gender (and youth) will be mainstreamed. The Gender and Youth Strategies will be implemented in complementary ways, as appropriate, to exploit commonalities, enhance efficiencies, develop innovative methods and approaches to capture the voices and needs of different stakeholder constituencies, particularly vulnerable women, men and youth, and above all create the synergies that multiply the value-added.

This Strategy starts with an overview of the DS CRP for readers unfamiliar with the Program. It then presents the rationale for the *Gender Strategy*, its goals, objectives, impact pathway and theory of change. Subsequent sections address the program structure, staff capacity, management and monitoring and evaluation (M&E) mechanisms, and budget issues for the Strategy's effective implementation to meet its targets. In conclusion, it highlights some potential risks of failure and conditions for success.

Our special appreciation goes to Jennie Dey de Pryck (GFAR/GAP) for her commitment to drafting the strategy, in collaboration with Aden Aw Hassan, Malika Martini, Iman El-Kaffass and Rajita Majumdar (ICARDA), Harry Palmier (GFAR), Courtney Paisley and Marina Cherbonnier (YPARD), as well as myself and many others who participated in the Gender and Youth Strategy Design Workshop in Malawi (20-21 September 2013).

Since we are treading on new ground, we see this Strategy as a living document, to be elaborated and enriched in the light of fresh insights and experiences among our many partners and stakeholders, as well as the evolving CGIAR reform process.

William Payne
Director, Dryland Systems CRP

1. Dryland SYSTEMS RESEARCH PROGRAM: A BRIEF OVERVIEW

The CGIAR Research Program (CRP) on Dryland Systems (DS) uses an integrated systems approach to develop technology, policy, partnerships and institutional innovations to improve the food security and livelihoods of poor and highly vulnerable populations. It addresses each of the 4 CGIAR System Level Outcomes (SLOs) given in the CGIAR Strategy and Results Framework (2011: 12): Reduced rural poverty, Improved food security, Improved nutrition and health, and Sustainably managed natural resources.

The CRP is implemented by 8 CGIAR centers: ICARDA (Lead), ICRISAT, Bioversity International, CIAT, CIP, ICRAF, ILRI and IWMI (see Annex 1 for these Centers' full names).

The dry areas of the developing world occupy about 41 percent of the earth's land area, and are home to 2.5 billion people, or more than one-third of its population. About 16 percent of this population lives in chronic poverty. About two-thirds of these dry areas consist of rangeland. Smallholder production systems, based on complex combinations of crops, vegetables, livestock, trees and fish, are constantly adapting to climatic conditions. Dry areas face serious challenges, including rapid population growth, high urbanization, youth-skewed age distributions, low status of women, the world's highest unemployment rates, and major environmental constraints that are likely to worsen as a result of climate change.

The Program addresses a spectrum of production systems that fall into **two broad categories**:

1. Those with the **deepest endemic poverty and most vulnerable people**; and
2. Those with **greater potential to contribute to food security and grow out of poverty** in the short to medium term.

1.1 Program Objectives and Goals

The overall **strategic objective** of the Dryland Systems CRP is to improve food security and livelihoods in rural communities of the dry areas.

The **strategic goal** is to improve the lives and livelihoods of 87 million people and mitigate land degradation in 1.1 million km² in six years (i.e. by 2020) through its work in target areas of Sub-Saharan Africa, South Asia, North Africa and West Asia, and Central Asia and the Caucasus.

1.2 Program Conceptual Framework

To reach this goal, the CRP follows a conceptual framework in which **eight Intermediate Development Outcomes (IDOs)**² are used as steps in the impact pathway to measure progress (Box 1).³ The latter are expected to take about 18 years. The first two IDOs are overarching and

² "Intermediate Development Outcomes (IDOs) represent changes that occur in the medium term that are intended to affect positively the welfare of the targeted population or environment, and which result, in part, from research carried out by the CGIAR and its partners. The IDOs are attributable to CRP-level activities and are necessary precursors and logically linked to the SLOs." (Independent Science and Partnership Council, 2012: 3).

³ The first 7 IDOs, adopted at the CRP launch in May 2013, were formulated in response to the evolving CGIAR reform process that led to the development of 11 generic system-wide IDOs in April 2013. The CRP Steering Committee approved the additional IDO8 at its second meeting on 16 September 2013.

incorporate the two broad target groups identified above. Since these two groups often co-exist within the same community, attention is given to potential synergies and/or conflicts of interest between groups.

Box 1: Intermediate Development Outcomes (IDOs) in the DS CRP

1. More resilient livelihoods for vulnerable households in marginal areas
2. More stable and higher per capita income for intensifiable households
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 agropastoral regions
5. Better functioning markets underpinning intensification of rural livelihoods
6. More integrated, effective and connected service delivery institutions underpinning resilience and system intensification
7. Policy reform removing constraints and creating incentives for rural households to engage in more sustainable practices that improve resilience and intensify production
8. Women and youth have better access to and control over productive assets, inputs, services, information and market opportunities and capture a more equitable share of increased income, food and other benefits

The first 4 IDOs target impact on wellbeing and sustaining the natural resource base while the rest relate to requirements for these to be realized at scale. **Four crosscutting themes** will be mainstreamed throughout the Program: **gender, youth, biodiversity and capacity building**.

1.3 CRP Impact Pathway and Theory of Change

a) Impact pathway: this is based on a theory of change that provides the causal linkages through which an intervention connects research outputs and outcomes through one or more IDOs to achieve the strategic goals.

b) Theory of change: this is drawn from Reeler (2007), who assumes three kinds of change:

Emergent change: the inherent process by which individuals, households, entrepreneurs, communities, organizations, and societies adjust to shifting realities, trying to improve and enhance their knowledge, skills, and conditions.

Transformative change: this occurs when individuals, households, and organizations challenge the *status quo* which is often based on tradition, culture and powerful interest groups. Such change can be negotiated among interest groups or can be conflictual.

Projectable change: this is based on change agents' ability to identify and solve problems and imagine the outcomes of different possibilities.

The Program aims to understand and harness positive emergent and transformative change processes, while projectable change forms the core of the Program's problem-solving research and logical frameworks at the different Action Sites (given in Annex 2) in the CRP's 5 Regions.

2. RATIONALE FOR MAINSTREAMING GENDER IN THE DS CRP

To meet its goals, the DS CRP will invest special efforts to promote gender equity because:

- a) Women make very significant contributions to agricultural production, processing, marketing, and household food security and nutrition, yet these often go unrecognized;
- b) Gender gaps in women's access to resources, inputs and services mean that their work in agricultural value chains falls far short of their potential in terms of scale, productivity and output, entailing huge costs to their countries and households; and
- c) Women's triple work burden (productive, caring and domestic work), much of which is manual and physically grueling, shapes their incentives and time available to adopt agricultural innovations, as well as their trade-offs between and benefits for their different roles.

However, making women's work visible, closing these gaps and reducing women's drudgery pose daunting challenges as the solutions are not simply technical but call for fundamental social transformation of gender relations in agriculture (Box 2). This section looks at gender roles in DS agriculture, explains the underlying social determinants of these roles and concepts of "power" and "agency" to affect improvements and transformative changes, identifies specific gender issues critical to the CRP's program, and concludes with a list of gaps in knowledge and practice vis-à-vis gender in dryland areas that the CRP needs to address.

Box 2: Gender and Sex

The term "gender" is a social construct, referring to social roles and relationships between men and women. These are shaped by ideological, cultural, economic, ethnic and religious factors and are a key determinant of the distribution of resources, rights and responsibilities between men and women. "Sex", on the other hand, refers to the innate biological categories of male or female. Sex is fixed but gender roles can and do change (FAO, 2011:4).

2.1 Women's Work in Dryland Systems

On average, women represent 43 percent of the world's agricultural labor force (FAO, 2011) and 47 percent of the global fisheries labor force (World Bank, FAO and WorldFish Center, 2010). These global figures mask considerable variations between and among regions and countries, as well as among the CRP's 28 Target Countries. Appendix Table 1 shows that, with the exception of Burkina Faso, all these Target Countries are experiencing a steady decline in the share of employment in agriculture, consistent with global trends (ILO 2011, Table A10). Yet the female share of the economically active population in agriculture is high, at over 40 percent in 20 of the 28 countries, and over 50 percent in 9 of these countries. Women's share increased between 1980 and 2010 in several Target Countries, suggesting a "feminization" of agriculture in these countries. This trend is striking in all the West Asia and North Africa (WANA) countries, and is particularly marked in Iran and Morocco where women undertake nearly half the agricultural work, and in Jordan and Syria where they do over 60 percent of the work. In the other Target Countries, the female share of agricultural labor has remained relatively stable, except for modest increases in Botswana, Malawi, Mozambique and Pakistan, and declines in Namibia, South Africa, Kazakhstan and Kyrgyzstan.

These national-level statistics underestimate the real extent of women's and girls' work, partly because of definitional and methodological problems, and partly because statisticians, researchers and even rural women and men often describe women's agricultural work as "housework" and women farmers as "helpers" (Doss, 2014). Women not uncommonly have more than one employment status, working as unpaid family workers as well as own-account workers or wage employees (Elson, 1990). Since context-specific information is vital to design effective interventions, the CRP will collect quantitative and qualitative gender- and age-disaggregated data on access to assets, the division of labor, employment status, decision-making roles and control of the product/income in each of its action sites using household and time-use surveys and case studies to identify key gender factors critical for the Program's success. Meanwhile, the broad patterns in the 5 CRP regions are given in Box 3.

Box 3: Gender Roles in the Dryland System Program's Regions

In **Sub-Saharan Africa (SSA)**, gender norms and ideologies give women more autonomy than in South Asia and in North Africa and West Asia. Although SSA women usually have an obligation to work on household crops, livestock or fish activities, and provide labor to their husband's agricultural enterprises, they have rights to their own plots, animals or commercial enterprises. In some farming systems, the gender division of labor is by crop or type of animal, with women often specializing in food crops (including vegetables and beans/pulses) and small animals for household consumption and sale of small surpluses and/or processed products, with the women controlling the resulting income. In other systems, the division of labor is by operation, with women usually assigned the *manual* planting, weeding and harvesting work. Women's own enterprises are generally smaller than men's although in some countries women are renowned as large-scale traders, for example, market women and fish processors/traders in Ghana (Overå, 2005) and fish brokers in Kenya (Kenya Marine and Fisheries Research Institute, 2010). This separation is less extensive in East and Southern Africa where farms may be jointly managed, male-managed or female-managed (Elson, 1990).

Although population pressure is growing in parts of SSA, most rural families have access to land and labor shortages have traditionally been met through various forms of reciprocal labor sharing and some casual wage labor. Large commercial farms relying on wage labor are less common. An important trend in some CRP countries is the growth of contract farming (mainly for European markets) which is heavily male-dominated (Maertens and Swinnen, 2010) and high value agro-export industries (vegetables, flowers, shrimps, fish) in which women often comprise over half the wage labor force. Many such women gave up work on their family and private farms, preferring these industries' work conditions and pay, despite the causal and often seasonal nature of the work (Dey de Pryck and Termine, 2014).

In **South Asia**, smallholder agriculture is usually operated as a family endeavor under the control of the male household head, with women mainly working as unpaid family labor. In many areas, they work in the fields, especially manual planting, weeding and harvesting. In areas where female seclusion is a valued ideal, women undertake a large share of agricultural processing and care of small livestock, and sometimes vegetable/fruit gardens and fish farming, within the homestead. Substantial inequalities in land holding sizes and the large number of landless families means that poor women also engage in agricultural wage labor. In some areas of India, male outmigration has exacerbated labor shortages, resulting in a modest rise in women's agricultural wage rates. There is also (inconclusive) evidence that the massive public works program launched under the 2005 Mahatma Gandhi National Rural Employment Guarantee Act, which provides women better paid and more socially acceptable work, has led to agricultural wage increases (World Bank, 2012, Box 8.6).

In **West Asia and North Africa (WANA)** smallholder farms women traditionally work as unpaid family labor. Social values of female seclusion often confine their work to the homestead, where they concentrate on raising small animals and on post-harvest work. However, they also work in the fields in family groups, protected by their male relatives. Despite these social values, women and girls from poor families also engage in wage labor. This is probably more common in North Africa than in West Asia. Bouzidi *et al.* (2011), for example, found a significant amount of female agricultural wage labor in Egypt where most of the female laborers were young single women. In Morocco, however, more than half the female laborers were married (a requirement also for Moroccan female contract workers in Spanish strawberry farms) while in Tunisia marriage status and age were less important than the families' socio-economic conditions. Female engagement in agricultural wage labor has been growing in the last two decades in Northwest Syria with the emergence of female labor contractors and female wage earners operating in labor gangs, usually near their own villages to provide social legitimacy (Abdelali-Martini and Dey de Pryck, 2014).

In **Central Asia**, the transition to a market economy has led to many years of disruption and poor returns in agriculture, although women have often been more negatively affected than men. This is typified by Uzbekistan where women had occupied managerial and decision-making positions in agriculture during the Soviet period* but now are increasingly confined to lower paid, lower skilled work (Alimdjanova, 2009). These trends are reinforced by discrimination in agricultural education: in 2005/6 women accounted for only 30.2 percent of students in professional/vocational education in agriculture, and 13.8 percent of students in higher agricultural education.

Gender stereotypes ascribe priority to women's household roles, and they combine household chores, especially provisioning the family and their animals with water, with tending their garden plots, livestock and poultry (and marketing some of their produce). Traditional Uzbek society has negative attitudes towards women entrepreneurs, discouraging women from engaging in such activities. In view of these stereotypes, it is not surprising that women only accounted for 17,000 (7.2 percent) of the 235,000 Uzbek leasehold farms registered by January 2008. Part of the reason is their lower access to collateral and finance: according to the State Statistical Department 85 percent of micro-credits were allocated to men. However, due to their managerial/decision-making positions in the Soviet period, a substantial number of women who were former leading kolkhozes workers still run private farms. Nonetheless, a growing disillusionment among women is leading to their increasing exit from the labor market, termed the "disappointed unemployed" (Alimdjanova, 2009).

2.2 A Transformative Approach to Gender

Gender relations in agriculture are determined by "*institutions*" that are social norms, values, beliefs, attitudes, rules and practices. These are country- community- or farming system-specific, reflecting their particular combination of social, cultural, ethnic, economic, religious and historical factors. Within a community with diverse ethnic, religious or class groupings, each group may have different (or overlapping) sets of *institutions*. These *institutions* determine access to resources, decision-making over the production and marketing process, control of the product/income, and what is considered appropriate behavior for women. Despite context-specific variations, these *institutions* invariably legitimize women's subordination and disempowerment in all the DS target countries (Munoz Boudet *et al.*, 2013; World Bank, 2012).

Kabeer (2010) notes that while these institutional factors explain many of the **gender-specific constraints** that women face in agriculture (e.g. reproductive work limits the kind of work rural women and girls can do and norms and values affect their mobility), the constraints they suffer can be **intensified** (e.g. because women/girls often have less access to land, schooling) or **imposed** (e.g. government action that privileges men's access to inputs, finance and extension (see examples and their implications for the CRP in Annex 3).

However, these institutions and gender constraints are not static. As suggested by Figure 1, they can be changed in response to economic, technological, social, environmental, political change processes that provide women new opportunities to benefit from agricultural innovations or for remunerative agricultural wage work. The achievements of women who take up these opportunities in turn often trigger changes in societal values regarding the type of work that is appropriate for women, their rights to control their own incomes, their decision-making roles within the family and society, and the opportunity cost of investing in girls' education and women's skills training. However, women cannot be passive "beneficiaries" of these opportunities: they need to become "empowered", to take action, to exercise "power" or "agency". Since clarity on what the DS CRP means by "empowerment" is important, we take the following definitions proposed by Kabeer (2010):

Power: people's capacity to make choices and exercise influence - in relation to themselves as well as others

Empowerment: processes by which this capacity is acquired by those who have been denied it

Agency: the capacity to exercise choice and pursue goals. Agency gives people the power to challenge or renegotiate unequal power relations. It operates by providing:

- **Voice** - to seek individually or collectively ways to bring about desired change, and
- **Exit** - to withdraw from or withhold cooperation in an unfavourable situation

Theories of empowerment identify processes of change associated with different concepts of power. For this Strategy, we have adapted Rowlands' (1997)⁴ typology of power or agency:

Power from within (change)—growing self-awareness, confidence, assertiveness, motivation, and a desire for change which can influence individuals to make/strive for change (even if they fail)

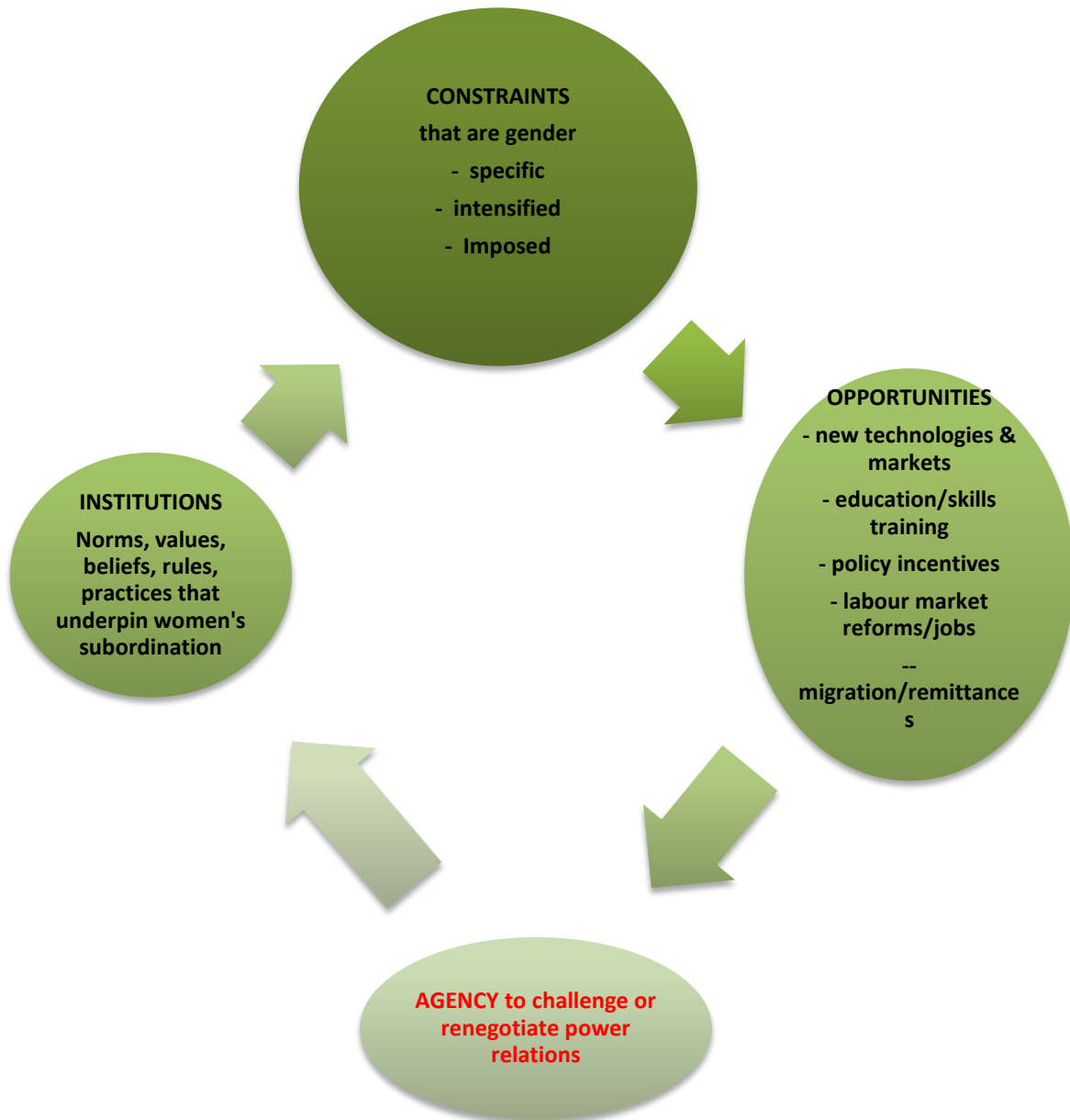
Power to do or to withdraw or withhold cooperation (choice)—growing individual capacities, especially through sharpening needed knowledge, know-how and skills, opportunities to access economic/agricultural resources and social contacts/networks, to make decisions, exercise authority and solve problems

Power over (control)—changes in access to underlying agricultural resources (including labor, jobs and income) and power relations, and the ability to benefit from these new opportunities and/or overcome power inequalities and constraints

⁴ See Abdelali-Martini and Dey de Pryck (2014) who used this typology in analyzing data collected in an ICARDA case study on Syrian women labor contractors and wage workers.

Power with (community)—collaboration, solidarity, shared vision and goals, and joint action with others, including in challenging social norms and practices, negotiating to tackle constraints or abuses, and action to defend common interests.

Figure 1: Women’s agency and transformative change



2.3 Gender-Related Issues in Dryland Systems: Why they Matter for the Program

Kabeer’s definition of empowerment and Rowland’s typology of power underlie the following presentation of the Strategy’s rationale for mainstreaming gender in the DS Program.

2.3.1 Gender gaps in access to productive resources, inputs and services: Despite women's substantial roles throughout agricultural value chains, they suffer large gender disparities in access to agricultural resources, extension and veterinary services, technology, information and markets, and to the control of the products and/or income from their sale. In reviewing the evidence of gender gaps in agriculture (**which are applicable to the DS Target Countries**), FAO (2011: 37-38) notes that for developing countries for which data are available:

- Between 10 and 20 percent of all landholders are women, though this masks significant differences among countries, even in the same region. The developing countries with the lowest and highest share of female landholders are in Africa.
- Smallholder farms operated by female-headed households are smaller in almost all countries.
- Women's livestock holdings are much smaller than men's, women earn less from their livestock, and are much less likely to own large animals such as cattle and oxen that can be used as draught animals.
- Farms run by female-headed households have less labor available for farm work because these families are usually smaller and have fewer working-age adult members and because women's heavy domestic work takes them away from more productive farm activities.
- Women and girls lag behind in education, despite improvements in recent years at national level. The gap is more critical in rural areas where female household heads have less than half the years of education of their male counterparts.
- The share of female smallholders who can access credit is on average 5-10 percentage points lower than for male smallholders. Access to credit and insurance is important for accumulating and retaining other assets.
- Women are much less likely to use purchased inputs such as fertilizers, improved seeds or mechanical tools and equipment, or have access to information technology and transport.
- Agricultural extension and technical/business skill training programs are heavily skewed in men's favor.

These gaps are very difficult to close because they primarily stem from social norms, values and practices. For example, women's and girls' disadvantages in access to land in DS Target Countries are commonly legitimized by civil, religious and customary laws, rules and practices governing rights to own, inherit, purchase and/or use property. Even if women have legal ownership or customary use rights to property, social norms and differential intra-household interests often prevent them from exercising their rights (e.g. India: Agarwal, 1994; Egypt: Najjar, 2013).

These gender gaps matter to the Program because:

- a) They represent huge costs to countries and households in terms of “lost” production.** FAO (2011: 42) estimates that reducing these gender gaps could raise yields on women’s farms by 20-30 percent. This would raise total agricultural yields in developing countries by 2.5-4 percent, reducing the number of hungry people in the world by 100-150 million.
- b) When women overcome resource constraints, they are as likely, or even more likely to become technological innovators.** For example, in Zambia (a DS Target Country), Kumar (1994) found that while female-headed households had lower adoption rates for hybrid maize (22 percent) than male-headed households (34 percent), the results varied by farm size. The share of female-headed households with over 3 hectares using hybrid maize was relatively higher than the comparable proportion of larger farms headed by men.
- c) Women are increasingly trying to close this gender gap themselves,** for example, by forming groups or cooperatives to rent land or fish ponds for individual or group enterprises. These practices circumvent traditional gender barriers to land and their husband’s control of their labor, products and income (e.g. see reviews in World Bank, FAO and IFAD, 2008). **Such women thus represent a very committed, creative and dynamic stakeholder group for the CRP. In many ways, they have so much more to gain from the CRP than men (Box 4).**

Box 4: Women act to close gender gaps in DS Program countries

Members of Jordan’s Specific Union of Women Farmers joined forces to rent land (SUWF, 2012).

ICRISAT’s Bio-Reclamation of Degraded Lands project in Niger helped women form a women’s association, a legal body that obtained the right to cultivate marginal lands. The project trained women to use micro water harvesting techniques to grow high value vegetables like okra and plant drought resistant fruit trees as personal enterprises (Bossuet, 2011).

2.3.2 Gender differences in decision-making and control of the products/income:

Social norms and practices also determine the control of labor, decision-making in agricultural management, and the control of the products/income. In most of the CRP Target Countries in South and Central Asia and in the Middle East and North Africa, women in agricultural households work primarily as unpaid family labor, with the male household heads taking the major decisions and controlling the products and income. This lack of autonomy and access to a

Box 5: Women’s earnings in Pakistan & Morocco (DS Countries)

An IFAD-funded ICARDA project in Afghanistan and Pakistan found that women handled roughly 70 percent of the livestock activities (while men predominated in crop production). Whereas men largely controlled social and agricultural decisions and incomes in tribal areas of both countries, Pakistani Punjabi women were actively involved in decision-making on livestock management, either alone or with their husbands, and the majority of the women controlled their income from selling dairy products. This provided an entry point for ICARDA to work with women’s groups (14 in Afghanistan and 15 in Pakistan) to help women increase their access to improved livestock technologies and markets, enhancing their income and family’s nutrition (Tibbo *et al.*, 2009).

ICARDA found that Moroccan women also earned a small income (sometimes hidden from their husbands) by selling milk, butter, chickens and eggs (Fernandez and Mehdi, 2013).

personal income undermines women's incentives to adopt new agricultural technologies, particularly if these would increase their workload but not their benefits. However, the situation is sometimes more nuanced (Box 5), providing entry points for CRP activities with women.

The situation is generally more favorable for the Program in its Sub-Saharan Africa Target Countries. In the sub-continent, women and youth commonly have an obligation to work on the male-controlled household fields and livestock as well as on their husband's/father's own fields, but have a right to cultivate a small plot or raise some animals on their own account which gives them greater incentives to test/adopt new technologies. However, these incentives may be undermined by gender inequalities. In Niger, for example, women and girls had smaller plots than young men (Crole-Reese and Mathieson, 2012). Culturally it is easier for young men than women and girls to escape such subordination through migration, although there is growing evidence of women withholding labor from their husband's farms or negotiating some form of remuneration if the women have socially legitimate alternative work on their own farms or businesses (Jones, 1986; Dey Abbas, 1997; FAO, 2011).

These gender differences matter to the Program because:

a) The introduction of new technologies can change the intra-household distribution of benefits, resulting in gender-differentiated incentives to adopt. Although women often benefit, there is growing evidence that when technological or market innovations for traditionally female crop or livestock enterprises result in considerable increases in profitability, men tend to take over, leading to a reduction in women's income, and/or an increase in their unpaid labor (FAO, 2011). **The implications can be serious for the CRP because women are likely to lose their incentives to work with the Program in general, and specifically because the loss of women's income will undermine the achievement of IDO3 (Box 6).**

Box 6: Gender impacts of innovations

Women's income has a much more important effect than men's income on improving food security and child nutrition (FAO, 2011).

Rural women already face a longer working day than men, so increased workloads will negatively affect their health and the time available for cooking and child care, damaging their children's health and nutrition (FAO, 2011).

The introduction of insect & disease resistant cassava in Nigeria increased women's workloads and reduced their control of the cash income (Marimo, 2009).

Women demotivated by loss of income and/or increased workloads may have to acquiesce in some societies but in others they might withhold their labor/cooperation e.g. in Cameroon women withheld labor from their husbands' rice crop to work on their own cash crops and/or men had to remunerate their wives to retain their labor (Jones, 1986).

b) CRP interventions that reduce gender inequalities in agriculture and increase the share of household income earned and controlled by women, can also contribute directly to other CRP goals, particularly with regard to food security and nutrition (IDO 3), and help raise the opportunity cost of investing in girls' education which has longer term benefits for food security and nutrition (Box 7).

Box 7: Increases in gender equity and women's incomes: potential payoffs for the CRP

Women's (but not men's) increased access to credit in Malawi increased total household expenditure on food and improved food security of female children (Hazarika and Guha-Khasnabis, 2008).

With the adoption of hybrid maize in Zambia, men increased the share of time they spent in agriculture compared with women. However, an increase in women's share of income from hybrid maize improved child nutrition far more than an increase in time at home (Kumar, 1994).

Food and nutrition security are worse in countries with high gender inequality gaps; e.g. child malnutrition rates in South Asia are twice those in Sub-Saharan Africa despite South Asia's better record in food supplies (FAO, 2011: 43).

Higher educational achievements for women are associated with better child nutrition and health (FAO, 2011; Meinzen-Dick *et al.*, 2011).

2.3.3 Gender discrimination in providing agricultural extension and services, and markets:

Efforts to expand the coverage of traditional agricultural extension systems to include women (e.g. through female extension agents, mixed farmer schools) often fail because there was no prior attempt to consult women on their needs, constraints and priorities and because these systems largely continue to have a commodity-focused approach, and are input- and supply-driven. Such approaches may meet (some) men's needs but are rarely appropriate for women in the Program's 5 Target Regions for whom agriculture is just one component of their way of life where the boundaries between agriculture, food provisioning and preparation, child care, domestic work, social networks are fluid (Jafry and Sulaiman, 2013; Manyire and Apekey, 2013). Traditional systems also tend to ignore the importance of social norms that often restrict women's mobility to go to extension and skills training sessions, the market, health clinics, the bank or women's group meetings, especially in societies where the ideal of female seclusion is practiced. This calls for a reform of current systems of extension and service provision to become more demand-led and gender-sensitive.

These gender differences matter to the Program because:

Although the CRP has no mandate to get directly involved in reforming/running extension systems or markets, the Program will fail to meet its IDOs 5, 6 and 8⁵ if these systems remain too out-of-touch with reality to provide fruitful partnerships with which the CRP can undertake participatory action research and disseminate its innovations. Such a partnership will be reciprocal, since the Program will provide quantitative data and qualitative insights on the gender-related factors, especially the constraints affecting women (by culture, ethnicity and religious affiliation, age; marital status, education etc.), and promising, culturally acceptable solutions.

⁵ IDO 5: Better functioning markets underpinning intensification of rural livelihoods

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

IDO 8: Women and youth have better access to and control over productive assets, inputs, services, information and market opportunities and capture a more equitable share of increased income, food and other benefits

2.3.4 Researchers' failure to consult and partner with women: Technologies designed for women's activities or for household enterprises where men and women perform complementary labor roles but men largely control the decisions on production and use of the product, without consulting women are often rejected. Reasons identified in case studies are that: they do not meet the women's priority needs, they increase women's labor on a male-controlled product, or the women do not control sufficient income to purchase/operate these technologies. For example, Moroccan women were not interested in new legume technologies being tested by ICARDA because these would require more female work on a male-controlled crop (Fernandez and Mehdi, 2013). Syrian female wage laborers begged the ICARDA social scientist to discourage research on mechanization of lentil harvesting as they feared that men would take over the task that gave the women their best-paid source of wage labor – and they kept the wages (Abdelali-Martini and Dey de Pryck, 2014).

The failure to consult or engage in participatory action research with rural women and men also means that researchers often fail to recognize the different interests and power *between* women and *between* men within different socio-economic, occupational or age groups (Cornwall, 2003).

These gender constraints matter to the Program because:

- a) **Women and men often have different needs.** Men tend to prioritize commercial aspects and women food security, taste, cooking and storage qualities, and the side-products such as straw or fodder for their small livestock (e.g. Niger: Crole-Reese and Mathieson, 2012; Morocco: Fernandez and Mehdi, 2013).
- b) **Women tend to be more risk-averse than men,** especially if the innovations concern staple household food (Villamor *et al.*, 2014).
- c) **If women control their own income, they are more ready and able to adopt innovations.** For example, Zambian women who controlled their own income from hybrid maize were able to purchase the hammer mills needed for grinding the grain, thereby reducing their labor expenditure on food preparation (Kumar, 1994).
- d) **Possible conflicts of interest or perceptions between men and women (due to social norms) mean that the CRP research teams need to work with both men and women.** For example, an IFAD-funded project in arid and semi-arid areas of Kenya, implemented by Africa Harvest Biotech Foundation International (AHBFI), demonstrated that working with men and women subsistence farmers and agro-pastoralists to understand their conditions and problems, unleashed a process of farmer/pastoralist experimentation and innovation, with inter-linked roles and benefits for adult and young men and women, that could not have been achieved by Africa Harvest's multidisciplinary team of biophysical and social scientists alone (Wambugu, 2012).

2.3.5 Gender disparities in community and agricultural organizations: In the DS Target Countries, women are commonly excluded from community and agricultural organizations as they rarely have ownership or use rights to land, livestock, pastures, grazing, forests, and ponds, and household agricultural produce is usually marketed by men. Even if women are members of such organizations, male elders commonly dominate in decision-making processes so women do not have genuine voice. This can lead to ecosystem degradation when

several inter-related crop-tree-livestock systems that are exploited separately and/or primarily by men or women are not addressed as an integrated problem. For example, women working in the argan oil value chain in Morocco recognize the fragility of their employment as the argan forest suffers from uncontrolled overharvesting and livestock interaction (Biermayr-Jenzano, 2013).

Evidence shows that women have different information, skills and needs in rangeland, water management and forest management systems that are very commonly neglected by male-dominated community organizations, with negative impacts on the community's development potential and its food security. To have an influence, women need to form a critical mass of about 25 percent of the members (Agarwal, 2010).

As Cornwall stresses (2003:1330), the presence of a few women – but without voice - in such organizations can be used to legitimize a decision taken by male members. Women and men do not necessarily share gender solidarity. Thus, the voice of some (elite) women in such organizations can increase or perpetuate inequitable “gender relations” *between* women (or *between* men). Older women sometimes give younger women household chores to prevent them from attending community meetings. In some participatory meetings young women have spoken out without being listened to. In other cases, where women of different ages aired their grievances, the men were angry because the women did this in public, and in some cases beat their wives later (Cornwall, 2003: 1333).

However, a growing number of promising good practices are increasing women's decision-making roles in mixed or women-only cooperatives and associations that deserve to be integrated within the CRP's design and implementation partnerships. In particular, young women who are often better educated than older men and women, are beginning to play important roles in the administration of such organizations as they are better equipped to master communication technologies and computerized business management practices.

These gender constraints matter to the Program because:

- a) If women's specialized knowledge, skills and needs are neglected by male-controlled community organizations managing land, pasture and water resources in pastoral and agro-pastoral areas with which the CRP works in order to achieve IDO 4,⁶ the CRP will fail to achieve this IDO.**
- b) With the growing incidence of women renting land or ponds, individually or in women-only groups, the Program will fail to reach such women who represent a very dynamic beneficiary group for the CRP, particularly in the context of IDOs 4 and 8,⁷ unless efforts are made to encourage the collaborating community organizations to promote women's membership and leadership roles within these organizations.**

⁶ IDO 4: More sustainable and equitable management of land and water resources in pastoral and agropastoral regions

⁷ IDO 8: Women and youth have better access to and control over productive assets, inputs, services, information and market opportunities and capture a more equitable share of increased income, food and other benefits

- c) **These innovative women** who rent land or ponds, as well as many other entrepreneurial women with whom the CRP works and who are eager to expand their marketed produce including processed products, need to play more equitable roles in mixed marketing organizations and cooperatives, and/or set up and run efficient women-only organizations/cooperatives. **If the CRP does not address gender issues in such marketing organizations, it will fail to achieve IDO 5.**⁸
- d) **Women are successfully grouping together (in formal or informal associations) to purchase and operate expensive equipment** such as grain mills in Burkina Faso (Kabeer, 2010) or run group or cooperative farms and value-added enterprises (World Bank, FAO and IFAD, 2008). The CRP will identify promising women's groups (taking account of possible differences in interest between women of different ages or socio-economic status) in each action site with which they will partner to capture these synergies, particularly to meet IDOs 5 and 8.

2.4 Gaps in Practice and Knowledge vis-à-vis Gender Issues in AR4D in Dryland Systems

2.4.1 Gaps in practice: Gender research carried out by CGIAR and partner research institutions in dryland systems hitherto has mainly focused on *ex-post* assessments of the impacts of innovative technologies or productive methods, or market opportunities by gender specialists. While still necessary, the overriding challenge for the DS Program is to integrate gender into the *ex-ante* diagnostic phase including definition of the research questions (RQs), priority setting, targeting and research design. This will require developing/testing more effective multidisciplinary methods for gender analysis⁹ to inform *ex-ante* diagnosis and planning. Since other CRPs are also working on filling this gap, with support from the CO Gender and Agriculture Research Network, the CRP will draw on their experiences and where possible develop joint activities.

2.4.2 Knowledge gaps:

While the existing gender research on different dryland crop, pastoral, agro-pastoral, forestry and fish systems will provide a valuable foundation for the CRP's work, some critical knowledge gaps need addressing:

- a) Because of the small-scale, piecemeal nature of most gender research in dryland systems so far, inadequate attention has been given to understanding the impacts of change processes in the broader socio-economic, political and institutional environment on gender roles and relationships and the implications for the adoption of agricultural innovations. While it is not the mandate of the DS Program to undertake in-depth analysis of these change processes, it will draw on the work of other Centers and CRPs¹⁰ in its activities to identify gender-differentiated

⁸ IDO 5: Better functioning markets underpinning intensification of rural livelihoods.

⁹ Gender analysis refers to the study of different roles, responsibilities, assets and agency of men and women, including their differential access to, control over and use of natural, financial, social, political and infrastructure-related resources (CCAFS Gender Strategy, 2012: page 8, footnote 2).

¹⁰ In particular, the DS CRP will draw on PIM's work in identifying gender-differentiated implications of global processes (such as global food price fluctuations, the expansion of multinational and national agro-processing

implications of global, regional or national processes for resource access, development opportunities and livelihoods, as well as gender relations in the Program's Target Countries and Action Sites.

b) Most gender research in dryland systems has mistakenly assumed women and men form homogeneous categories, and has failed to give adequate attention to identifying the gendered characteristics and interests of different socio-economic, ethnic, religious or occupational groups. Within these heterogeneous groups, women's (and men's) needs, opportunities and incentives often vary by age, marital status, stage in the life cycle (particularly in relation to their child-bearing and -raising roles), education and skills. It is important that the CRP identify these different sub-groups not only to address their respective needs, but also because they may have **conflicting** interests, as in the case of female wage laborers compared to female owner-operators who hire labor. Rich women are as likely as men to discriminate against poor women (or men), displaying a lack of gender solidarity.¹¹

c) While many Center and DS CRP baseline surveys collect sex-disaggregated data, these data are often not disaggregated by age or socio-economic class, ethnicity etc.¹² Also such data are frequently collected with little regard to gender dynamics, gender relations or the contexts in which the data are collected (Cornwall, 2003:1336).

d) There is a lack of knowledge on gender roles and gender dynamics in community organizations that manage land and water resources in dryland pastoral, agro-pastoral and mixed cropping areas, and the implications for sustainable and equitable management and benefits.

3. CONSULTATIVE PROCESS FOR GENDER STRATEGY DEVELOPMENT

The consultative process involved multi-stakeholder Target Region Implementation and Partnerships (TRIP) workshops held for each of the Program's 5 Regions¹³ which identified, *inter alia*, region-specific gender issues and related strategic research areas. Subsequently, a two-day Gender and Youth Strategy Design Workshop (Malawi, 20-21 September 2013) enabled a number of senior CGIAR biophysical scientists, economists and social scientists representing several Centers and DS Regions, together with gender, youth and agricultural specialists from the Malawi President's Office, national agricultural research systems (Ethiopia, Mozambique), CSOs based in several Southern African countries, the Young Professionals' Platform for Agricultural Research for Development (YPARD) and the Global Forum on Agricultural Research (GFAR) to review the regional priorities and select a small number of major cross-cutting research themes that were expected to result in large payoffs.

enterprises, the development of contract farming, climate mitigation and adaptation, and migration/remittances) on resource access, livelihoods, opportunities and on gender relations.

¹¹ For example, a case study in an Indian village by Joshi *et al.* (2003) cited by Espey (2011: 33) found that the female treasurer of the water and sanitation committee was the most vocal in pushing for the exclusion of the poor low-caste women in the village. However, gains for one group/category do not necessarily mean losses for others - "win-win" outcomes are possible, as among the Syrian women labor contractors and wage laborers (Abdelali-Martini and Dey de Pryck, 2014).

¹² See, for example, the Report of the TRIPs meeting in South Asia, August 2013.

¹³ North Africa and West Asia (Tunisia, 26-28 July 2013), West Africa (Kumasi, Ghana, 1-2 August 2013), Central Asia (Uzbekistan, 12-14 August 2013), South Asia (Nepal, 26-28 August 2013) and East and Southern Africa (Malawi, 17-19 September 2013).

4. TARGET BENEFICIARIES

The prime beneficiaries are: a) poor, vulnerable people, especially women (the focus beneficiaries of IDO1), and b) men and especially women with the capacity to intensify production or diversify into new value-addition enterprises, including creating employment for the poor (focus beneficiaries of IDO2).

Attention will be given to the inter-relations between these 2 beneficiary groups. For example, men and women in the intensifying, more entrepreneurial group may adopt Program innovations that displace or create labor opportunities for poor men and women in the first group. **Our strategy, therefore, aims to address gender inequalities within this broader context of systemic socio-economic stratification and differentiation.**

Baseline surveys will be used to identify and develop a typology of the most appropriate groups with which to work, and these groups and typology will be reviewed regularly as part of the Program's M&E activities.

5. GENDER-RESPONSIVE GOAL AND OBJECTIVES

5.1 Overall Goal

The Strategy's **overall goal** is: *to promote gender-equity in access to and control of agricultural assets, technologies, services, products and income in dryland systems in order to enhance the food security, wellbeing and resilience of poor vulnerable households, especially women and children*

5.2 Overall Gender-Responsive Objectives

The strategy's **overall gender-responsive objectives** are to:

1. Contribute to developing and implementing **more effective interdisciplinary ex-ante diagnostic methods that integrate gender analysis and ensure gender equity in targeting and prioritizing the CRP's research programs** (all IDOs).
2. Through integration of gender in research, improve knowledge/understanding of the key cultural, ideological, normative and institutional factors in the CRP's 5 Regions, and emerging changes and trends in these, **that lead to gender inequalities and identify effective gender-responsive and transformative ways of addressing these to increase production, incomes and food security and women's share of these benefits** (all IDOs).
3. Contribute to the design of processes, technologies and related policy and institutional frameworks for **vulnerable households in marginal dryland areas that reduce gender disparities** in critical vulnerabilities and access to agricultural and domestic technologies, particularly to reduce female drudgery and improve the resilience and wellbeing of resource-poor men and women (primarily IDO 1).

4. Integrate gender differences and equity goals into the development and testing of technologies to intensify production and increase value addition along selected DS crop and livestock value chains, with a focus on entrepreneurial men and women with potential to grow out of poverty in the short to medium term, **so that women capture a more equitable share of the increased production, income and other benefits** (primarily IDOs 2 and 8).

5.3 Research Questions

In order to have a major impact, the DS Program will concentrate on 4 areas in which it is uniquely positioned to do well. These areas and related research questions (RQs) are described below. Since the DS CRP has only been launched recently, and global dryland systems research in the CGIAR with strong gender research is a new concept, the RQs are presented as broad "open questions" for the concerned multi-disciplinary research teams to agree during their planning meetings on 2 or 3 themes and the very specific related research objectives/hypotheses/methodologies for the initial 3-6 years of the Program. These will be developed across the CRP Action Sites to permit comparability and shared learning. They will also be developed in ways that will permit each Regional/Action Site team to identify and address context-*specific* issues and RQs relevant to their sites, as appropriate. **The rationale for selecting 2 to 3 themes across all the Program's sites is that the Program will have greater impact and credibility by designing/implementing 2-3 very substantial comparative programs across all 5 Regions to gather a robust body of data to inform policy and future research design.** The initial areas and related research questions are:

1. What are the ***specific* gender knowledge gaps and priorities in the 5 Target Regions that have important implications for gender-equitable demand-driven technology development and adoption** by men and women, as well as the possible commonalities and critical differences across regions, to enable larger-scale cross-region studies that have more substantive impacts?
2. How do **cultural, ideological, normative and institutional factors in the Program's Target Regions and Countries, and emerging changes and trends in these factors, affect gender relations?** What are the implications for the diagnosis and prioritization of research problems and targeting, and implementation of (for example) plant breeding, systems agronomy, environmental sustainability and conservation, crop-livestock interactions, climate-smart production practices, and crop and livestock value chain improvement?
3. What are **promising ways of facilitating (transformative) change in norms, attitudes and practices underlying gender disparities in the dryland systems targeted by the DS Program? What are promising institutional arrangements to increase women's voice and power** in dryland community and agricultural organizations to ensure more sustainable and equitable community resource management and use, and more equitable access to CRP innovations in technologies, inputs, services and markets? **How do these changes in norms and practices affect intrahousehold gender relations and what are their implications for the Program's development development and dissemination?**

4. What are **promising technologies to reduce the drudgery of women's household and agricultural work** to free up time and energy to engage in agricultural diversification, intensification and/or value-addition in dryland crop-livestock systems, and **promising practices** for women to purchase, operate and maintain such technologies at the individual, household or community level?

5.4 Research Activities

This section lists **potential** activities to implement the Strategy's RQs. The **actual** activities will be selected/prioritized by multidisciplinary teams in partnership with non-CGIAR stakeholders, in early 2014, with a focus on agreeing 1-2 RQs/sets of activities for 2014-5 that can be carried out across ALL the 5 Target Regions to maximize comparability and identification of critical differences, learning and impact (see also section 6.2 on Partnerships for Research).

5.4.1 What are the *specific* gender knowledge gaps and priorities in the 5 Target Regions that have important implications for gender-equitable demand-driven technology development and adoption by men and women, as well as the possible commonalities and critical differences across regions, to enable larger-scale cross-region studies that have more substantive impacts?

Activities:

- Collecting/analysing sex- and age-disaggregated data by farming system, socio-economic, ethnic and religious group (as appropriate) in each of the CRP's Action Sites to estimate gender gaps in access to assets, technologies, management decision-making, labor, inputs and services, as well as gender gaps in productivity, wages and income in different nodes of crop and livestock value chains, in order to carry out statistical analyses to determine the extent and significance of these gaps.
- Collecting/analysing data (disaggregated by sex, age, farming system, socio-economic, ethnic, religious group) on the intra-household control of the products/income and the implications for women's incentives and ability to adopt agricultural innovations.
- Integrating the implications of the above data and gender analyses into the Program's *ex ante* diagnostic analysis, targeting and research design in each Action Site, in particular for selecting "entry points" for technology development and dissemination.
- Undertaking comparative studies across the 5 Target Regions to understand better the commonalities and differences, and promote cross-region learning.

5.4.2 How do *cultural, ideological, normative and institutional factors in the Program's Target Regions and Countries, and emerging changes and trends in these factors, affect gender relations?* What are the implications for the diagnosis and prioritization of research problems and targeting, and implementation of (for example) plant breeding, systems agronomy, environmental sustainability and conservation, crop-livestock interactions, climate-smart production practices, and crop and livestock value chain improvement?

Activities:

- Integrating into each Action Site's **multidisciplinary** baseline/diagnostic study qualitative research activities to identify:

- How prevailing normative and institutional factors determine gender roles and decision-making power in and benefits from dryland system agriculture, and how these affect men's and women's *incentives* to adopt the CRP's different technology innovations
- How the main drivers of change and their gendered impacts affect the DS Program's potential to increase resilience, reduce poverty and enhance productivity and incomes
- How gender influences attitudes and behavior regarding *risk*, and the gendered implications for engaging in the Program's innovations
- Undertaking 1 or 2 case studies within the cross-CRP Global Study on Gender Norms and Agency in Agriculture, to be implemented in 2014/5 by members of the CGIAR Gender and Agriculture Research Network, with focus on the implications for gender-equitable technology development and adoption in dryland crop and livestock systems.¹⁴ A key partner will be the Aquatic Agricultural Systems (AAS) CRP, as this is also a "systems" CRP and it has longer experience in addressing gender-transformative development.¹⁵ However, a series of partnerships will also be developed with regional, country and local NARS, CSOs/NGOs and universities with interest/practical experience in these issues in the diverse DS regions and countries. It will also seek to partner with the Dryland Cereals CRP which is strong on integrating gender in technology development but largely neglects the underlying social and normative causes of gender inequalities, their implications for technology development/adoption, and the need for gender-responsive and -transformative action for effective AR4D.

5.4.3 *What are promising ways of facilitating (transformative) change in norms, attitudes and practices underlying gender disparities in the dryland systems targeted by the DS Program? What are promising institutional arrangements to increase women's voice and power in dryland community and agricultural organizations to ensure more sustainable and equitable community resource management and use, and more equitable access to CRP innovations in technologies, inputs, services and markets? How do these changes in norms and practices affect intrahousehold gender relations and what are their implications for the Program's development development and dissemination?*

Activities:

- Identifying/analysing different cases in the Program's 5 Target Regions where collective action has triggered social change, e.g. women's groups or cooperatives renting land or fish ponds for group enterprises, or taking joint loans to buy equipment for new crop or dairy value addition activities, and women's movements demanding legal or administrative reforms to ensure gender equity. This activity would also investigate how the CRP can build on/harness such social action to develop demand-driven technical and

¹⁴ The DS CRP/ICARDA have agreed to join this cross-CRP Study and are investigating potential Action Sites and researchers to undertake the work.

¹⁵ See, for example, CGIAR Research Program on Aquatic Agricultural Systems. 2012. Gender Strategy Brief. A Gender Transformative Approach to Research in Development in Aquatic Agricultural Systems. RQs 1 and 2 above, and some of the activities, were inspired by this Brief (page 5).

institutional innovations, as well as the effect of CRP innovations in stimulating (more) gender-transformative social action.

- Cataloguing gender-differentiated traditional knowledge in managing and using natural resources such as pastures, wild food, aromatic and medicinal plants, fuel wood and tree products, water harvesting, and studying/analysing the way in which institutional arrangements in dryland community-based organizations (CBOs) capitalize on/neglect women's specialized knowledge in (aspects of) natural resource management (NRM) and the implications for the design of CRP interventions.
- Identifying, consolidating and disseminating learning from good and failed practices in the 5 Target Regions to increase women's voice and power in community pastoral, water management, fuel wood lot and forestry organizations, and in agricultural service and marketing organizations, with attention to differential outcomes for women and men of different socio-economic and age categories.

5.4.4 *What are **promising technologies to reduce the drudgery of women's household and agricultural work** to free up time and energy to engage in agricultural diversification, intensification and/or value-addition in dryland crop-livestock systems, and **promising practices** for women to purchase, operate and maintain such technologies at the individual, household or community level?*

Activities:

- Identifying a gender-sensitive biophysical and socio-economic framework to identify labor bottlenecks and feed into developing labor-saving, drudgery-reducing domestic and agricultural technologies particularly for female tasks, as well as capacity-strengthening strategies for single and multi-enterprise crop-livestock systems and related value chains.
- Identifying/disseminating good practices in enabling women to purchase, operate and maintain such technologies at the individual, household or community level, including grain mills, fish drying equipment, postharvest & processing technologies, storage of groundnuts and other products to avoid aflatoxin, fuel wood lots, dairy processing.
- Investigating incidences of men taking over women's productive, income-generating agricultural enterprises if the work is mechanized to reduce drudgery and raise productivity/incomes, including impacts on women's incentives, workloads and family/child nutrition and wellbeing, as well as promising ways of ensuring that women capture an equitable share of any benefits.
- Identifying gender-related incentives and outcomes in response to changes in labor demand with intensification of crop or livestock systems (IDO 2).

6. THEORY OF CHANGE AND IMPACT PATHWAY

6.1 Theory of Change

Our theory of change is based on a model of social change whose explicit aim is to reduce social inequalities, inequities and poverty, and to support the marginalized in their struggle for "empowerment". Thus, while this Strategy focuses on women's empowerment, it also takes into consideration the fact that poor men may also be disempowered.

The theory of change, illustrated in Figure 2, builds on the concepts of "institutions" (illustrated in Figure 1), Kabeer's (2010) definition of "empowerment" and Rowlands' (1997) typology of power or agency, all of which were introduced in section 2.2. Figure 2 demonstrates the root causes of inequality and disempowerment, and the pathways by which these are translated into disadvantages for women (and poor men) in the adoption of agricultural innovations. As Figure 2 indicates, these disadvantages faced by women (and poor men) can be mitigated or reversed through external changes, public action and/or social movements.

This is also consistent with the CRP's overall theory of change (section 1.3) taken from Reeler (2007): **Emergent change** when individuals, households, communities, organizations etc. adjust to changing realities and opportunities; **Transformative change** when individuals, households, and organizations challenge the *status quo*, through negotiation or conflict; and **Projectable change** when external change agents work with stakeholder groups to identify and solve problems creatively.

Recognizing that the DS CRP is also "external" to the three types of change processes mentioned in Figure 2 (external changes, public action and/or social movements) the theory of change provides a model to help the CRP identify ways in which it can contribute appropriately and effectively. For example, the CRP can take the role of Reeler's "change agents" to:

- Identify, harness and build on positive "external changes" (which are similar to Reeler's "emergent change") to develop demand-led innovations (e.g. gender-sensitive climate smart production practices).
- Provide data/analysis that inform, support and monitor and evaluate the impact of public policies and action in improving gender-equitable contributions to and benefits from agricultural innovations.
- Partner with social movements that are calling for changes in the *status quo* (similar to Reeler's "transformative change", to close gender gaps in access to individual, household or community resources and to innovations for/in dryland systems.

Figure 2: Theory of Change

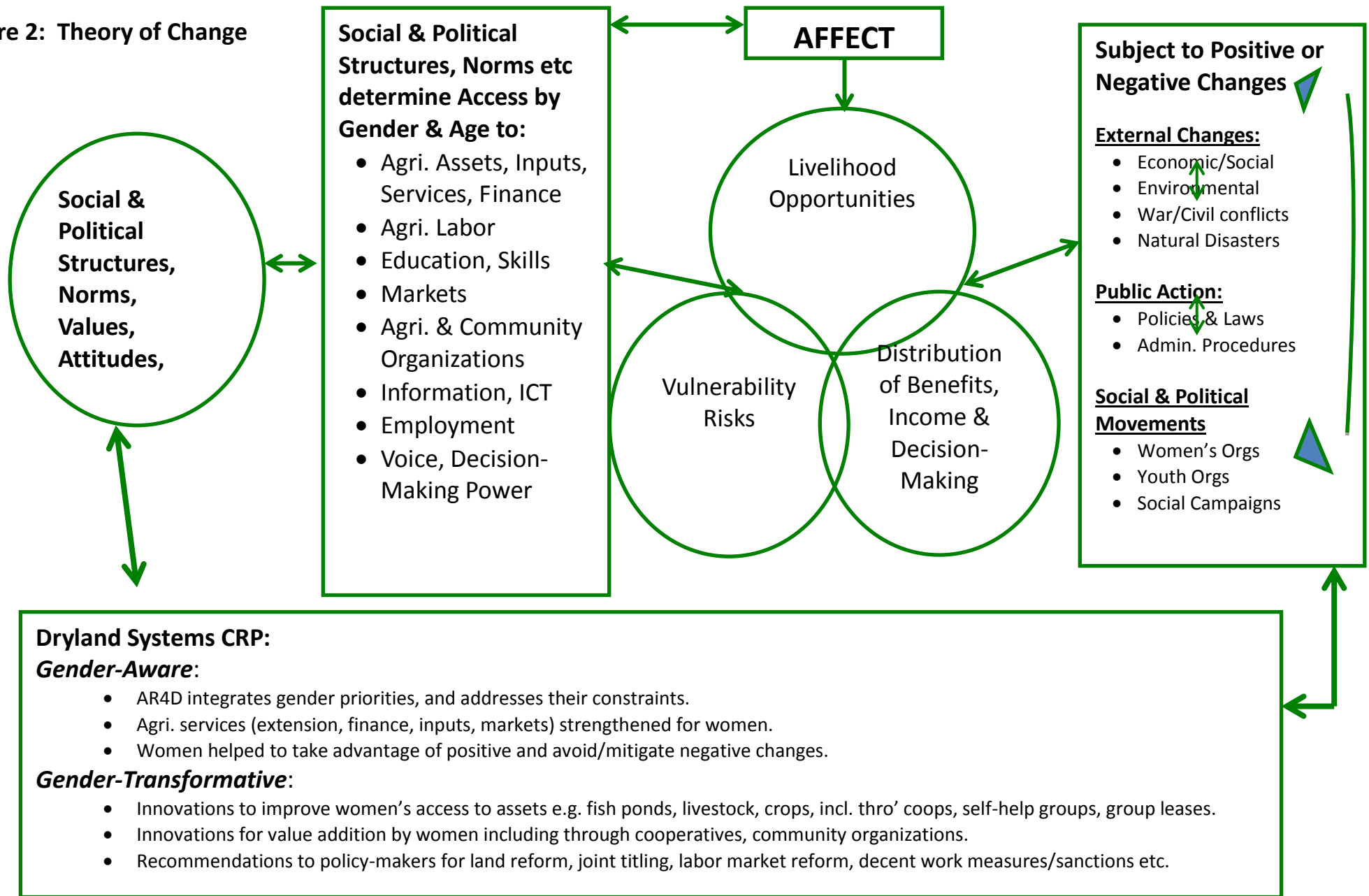


Figure 2: Theory of Change

As Figure 2 indicates, the root causes are the underlying social and power structures, and societal norms, values, attitudes, customs and practices. These inter-related factors determine access by gender and age (and socio-economic class) to livelihood and agricultural assets (Box 8), services, information, voice and decision-making power, as well as the ability to seize new opportunities to improve production, incomes and welfare. Access to some of these assets may be based on customary practices. For example, customary land use rights in Sub-Saharan Africa are often more flexible than land ownership and inheritance practices in countries/cultures where they are enshrined in civil and/or religious laws which make them more resistant to change.

Box 8: Types of livelihood assets for agriculture (illustrative examples)

Human capital: household members, active labor, education, knowledge and skills, health and nutritional status

Physical capital: livestock, irrigation pumps, equipment, houses, factories, cold storage, vehicles

Natural capital: access to land, forests, water, grazing, fishing, wild products and biodiversity

Financial capital: savings/debt, gold/jewelry, income, credit, insurance

Social capital: kin networks, group membership, cooperatives, agricultural producers', employers' and workers' organizations, socio-political voice and influence

Adapted from Carloni, 2005, Box 4

Access to these various agricultural resources and voice in turn affects and is affected by 3 clusters of inter-related factors: a) vulnerability and risk (Box 9), b) opportunities for improved livelihoods and welfare, and c) who controls the benefits of adopting agricultural innovations and/or engaging in other development opportunities, and who enjoys (some of) the benefits (may be different people). This is important to the CRP as the ability to control (or enjoy) benefits affects incentives to adopt Program innovations.

These 3 clusters of factors are not static, but change in response to external events that can be violent shocks such as earthquakes, floods or major food price hikes, to public action (policies, laws, administrative procedures) and/or popular demand voiced through protests and strikes (against food price rises or the young demanding jobs) or more gentle social movements and campaigns.

Box 9: Vulnerability, Risk and Gender

From a systems perspective, some of the most vulnerable systems are pastoralists and smallholder farmer systems in dry areas, whose vulnerability is expected to worsen with climate change (HLPE, 2012: 44). However, in this strategy we view vulnerability through a social lens, and consider the vulnerability of communities, households and individuals. We take the UNICEF (2012) definition: *"vulnerability captures the interaction between exposure to risk and the capacity to respond and cope."*

As the HLPE (2012) also notes: vulnerability has 3 dimensions: *"exposure to risks, their magnitudes, and sensitivity to them, which both determine the magnitude of the impacts, and the ability to respond and adapt"*. These three dimensions have intertwined economic, social, gender and age dimensions, which stem from the socio-economic inequalities shaped by the underlying social, political and economic power relationships.

At the community level, all households may be more or less equally vulnerable to certain types of shocks - such as earthquakes, floods, tsunamis, epidemics (such as HIV/AIDS), livestock diseases, civil war, and climate change. However, socio-economic differentiation within communities means that poor households and individuals will be much more vulnerable to other types of shocks, especially those associated with threats to livelihoods. For example, those with little land and low productivity are especially vulnerable to droughts that cause harvest failure or animal deaths. Poor producers and wage earners are very vulnerable to food price hikes, loss of work, and family illnesses, accidents and deaths. Vulnerability can increase over time and its severity deepen, if households face repeated shocks that steadily erode their assets (HLPE, 2012: 29).

Poor people face a permanent, chronic state of vulnerability while those who are less poor may face transitory or seasonal vulnerability against which they may be able to insure, for example, with crop, water or animal insurance, anti-seismic buildings, food reserves. The capacity to respond is also shaped by the extent to which vulnerable groups receive social protection, free or subsidized food, and the possibility and efficiency of up-scaling these rapidly in disaster situations.

While all poor households are vulnerable, women, children, youth and the elderly are often at greater risk. In the context of our strategy, women may experience enhanced vulnerability, for example, because:

- Female-headed households are often poorer than male-headed households (women invariably have smaller land and livestock holdings, less ability to buy insurance, less access to extension, veterinarian services and medicines, lower wage rates etc)(FAO, 2011)
- Gender inequalities within male-headed households mean that women - and girl children - often eat last and less
- Social protection programs often target households, assuming that resource transfers will be equitably shared among family members in need, an assumption that is not always valid; cash transfers targeted to women can increase intra-household violence against women (Holmes and Jones, 2013)
- Public works programs providing temporary work for the poor (very important in India, for example) often allocate most of the jobs to men, while gender-insensitive quotas for women can overburden them (especially if crèches are not provided) given women's heavy domestic and caring responsibilities
- Adult and young men are more able to migrate for work than women, for social reasons and their generally higher educational levels
- Women and young girls face greater risks of sexual abuse in certain types of jobs, and in civil wars

The value of such a theory of change ultimately lies in the extent to which the CRP can use it to guide its identification of research priorities, methods and targeting to reach its goals. Thus, rejecting the "business as usual" gender-blind approaches to technological innovation, the Strategy focuses on interventions that are **gender-aware and gender-transformative** (Box 10). It is important to note that these are not mutually exclusive: interventions that aim to be aware may have some transformative elements immediately or over time. In some cases, to avoid resistance it may be pragmatic to start with less threatening gender-aware interventions in order to build confidence among the local community before trying out a more transformative intervention. The implications for the DS CRP are:

- Gender-aware development: takes account of gender constraints and needs in designing and implementing AR4D.** For instance, the CRP will integrate gender considerations into the design of its programs to develop, for example, improved seed varieties, agronomic practices, water harvesting/control methods, soil conservation methods, and productivity-enhancing technologies for single or mixed crop, livestock and fish enterprises. It will also collaborate with development partners (including extension, finance and marketing organizations) to ensure gender equity in access to these new technologies as well as training and information in their use and maintenance. These partners will also provide the research teams feedback on the relevance and effectiveness of these technologies, to help refine the design of their next round of research activities.

Box 10: Gender for inclusive development

Gender-blind development: excludes women or brings them in on terms that reproduce their secondary status

Gender-aware development: brings economic and welfare benefits to women and their families but does NOT challenge the status quo (can lead to unanticipated transformations)

Gender-transformative development: promotes structural changes to address power inequalities

Source: Kabeer, 2010.

The gender constraints that the CRP will focus on will include, *inter alia*, drudgery reducing technologies and systems (for women’s domestic, homestead and field work), more productive small livestock putting greater income in the hands of women, agronomic systems that require less weeding, more water-efficient systems for crops and livestock that reduce female drudgery, and more efficient post-harvest technologies that are labor-saving and reduce food contamination and losses (e.g. aflatoxin, nematodes etc.).

- Gender-transformative development: promotes AR4D for women as independent farmers, managers, or entrepreneurs.** This is easier for the CRP to promote if it is working in situations of ongoing transformative changes such as public policy reforms that allocate joint husband-wife land titles, equalize gender rights in family or inheritance laws, permit women to sign legal documents and take out bank loans without their husband’s signature, enforce quotas for women in decision-making roles in community and agricultural organizations and cooperatives. In this type of propitious change environment, it is easier for the CRP to develop improved technologies for traditionally female crop and livestock production and processing enterprises in the knowledge that they are likely to be adopted. Such propitious environments also

encourage/facilitate women and girls entering new value chains or VC nodes, such as dairy processing or growing/selling aromatics and medicinal plants. At the same time, the CRP's work to increase women's incomes can also have a transformative effect by increasing their self-confidence and decision-making power within the family and community.

In order to assess whether or not to embark on gender-aware or transformative innovations, it would be useful for the CRP to do the sort of analysis suggested by Figure 2 and Annex 3.

These examples of possible technology development that can be gender-aware or gender-transformative are given as *indicative*. Since the DS CRP and its Lead Center have limited experience and staffing capacity in gender research and mainstreaming, especially compared with many other Centers and CRPs (CGIAR Consortium, 2013c.), the multidisciplinary research teams in each of the 5 Regions will need to identify the *specific* gender knowledge gaps and priorities in their regions that have important implications for targeting demand-driven AR4D, as well as the possible commonalities and critical differences across regions, to enable larger-scale cross-region studies that have more substantive impacts.

6.2 Partnerships for Catalyzing Transformative Change

External actors, such as researchers, cannot (and should not) impose transformative change on the Program's men and women stakeholders. As Kantor and Apgar (2013: 3) write with respect to the AAS, "....development is a process that occurs organically through the engagement of people in their communities who define their own processes of transformation. For a program such as AAS that intends to foster development and transformation for the poor and marginalized, *being cognizant of its external role is a necessary first step in defining how to engage appropriately*" (our italics).¹⁶ The implication is that the "business-as-usual" view of "research as the driver of the change process through delivery of technological solutions" needs to be replaced by the concept of "research as a tool for supporting people...(particularly the most marginalized) in their own transformational development process" (Kantor and Apgar, 2013: 6). This approach is also consistent with that of Reeler's theory of change that underlies the whole DS CRP.

The DS Gender Strategy also adopts this approach. Like the AAS, it will use Participatory Action Research (PAR) to engage rural men and women participants in their own process of reflecting, learning and acting to improve their lives. This iterative process will also enable these rural stakeholders to identify with the Program researchers the areas in which they would welcome the researchers' help. While such demands will doubtless include requests for technological innovations to solve gender-differentiated needs and priorities, the Theory of Change also indicates that technologies alone are not enough to effect gender-responsive or gender-transformative change. Firstly, there is a need for an appropriate enabling environment (policies, information, markets, services, finance, capacity building). Secondly, there is need for the Program's activities to be grounded within a broader process of social change that should be primarily driven by the rural people themselves (e.g. women uniting in their own organizations to rent land, negotiate better produce prices etc.) though also (hopefully) facilitated by public policy (e.g. laws on joint land titling).

¹⁶ See Kantor and Apgar, 2013, for an insightful discussion of gender transformative processes with regard to the AAS, which provides a rich resource for the DS Program also.

This means that the Program’s research team also needs to work in partnership with other actors supporting the men and women stakeholders in gender-equitable ways. These will be selected on a country or Action Site basis, according to the particular IDO and the local specificities. For example, IDO 5 on markets will involve developing gender-responsive partnerships with individuals or organizations representing market development and management, market information, safety and hygiene, transportation, storage, refrigeration, as well as mixed or single sex organizations representing the producers/processors selling (or interested in selling) in those markets. IDO 6 on service delivery will involve the Program researchers in partnerships with veterinarians, veterinary medical supplier, extension agents, IT specialists and so on.

Finally, the Theory of Change indicates that these technological and other change processes can lead to both gender-aware and/or gender-transformative development. These are not mutually exclusive and gender-aware interventions can also lead to more transformative outcomes (see section 6.1). The key point is that the men and women stakeholders should set the parameters of which type of development they wish to aim for.

6.3 Impact Pathway

The Dryland Systems CRP has a two-pronged approach to integrating gender along the impact pathway. First, it aims to integrate gender within the first 7 IDOs, and their specific impact pathways. Second, it engages in strategic research and analysis under IDO 8 to provide a coherent set of specific outputs that will also enrich inter-disciplinary understanding, dialogue and shared methods to mainstream gender in the first 7 IDOs.

The steps in the impact pathway, illustrated in Figure 3, and their logical flow, are elaborated below.

The impact pathway was designed through an iterative process that started with defining the desired “impact”. This “impact” was agreed at the participatory multi-stakeholder Malawi Strategy Design Workshop in September 2013. We then identified the “guiding principles” that underlie the iterative process of developing the “impact pathway” from “outputs” to “impact”, via “research outcomes” and “development outcomes”. The Strategy’s theory of change informs and explains the rationale behind the assumptions that specific “outputs” will lead to specific “research outcomes” and “development outcomes”, which will in turn contribute to the Strategy’s overall goal, the achievement of which is reflected in the “impact”.

The Strategy’s impact pathway is inspired by the CGIAR reform process that aims to enhance the CGIAR’s partnerships with the NARS and other development actors (policy makers, public, private and civil sector development practitioners, donors, media, farmer/pastoralist advocacy organizations) **to realize desired impacts on the ground, so that that technologies do not “remain on the shelf”**. This entails linking the CRP’s research processes, outputs and outcomes to the broader goals of achieving broader behavioral, policy and institutional change.¹⁷

¹⁷ See, for example, contributions by Mark Holderness (GFAR), Christian Hoste (Agreenium), Richard Hawkins (ICRA) Wellington Ekaya (RUFORUM) to the CGIAR Consortium Workshop: towards a CGIAR Strategy on Capacity Development (Nairobi, October 2013).

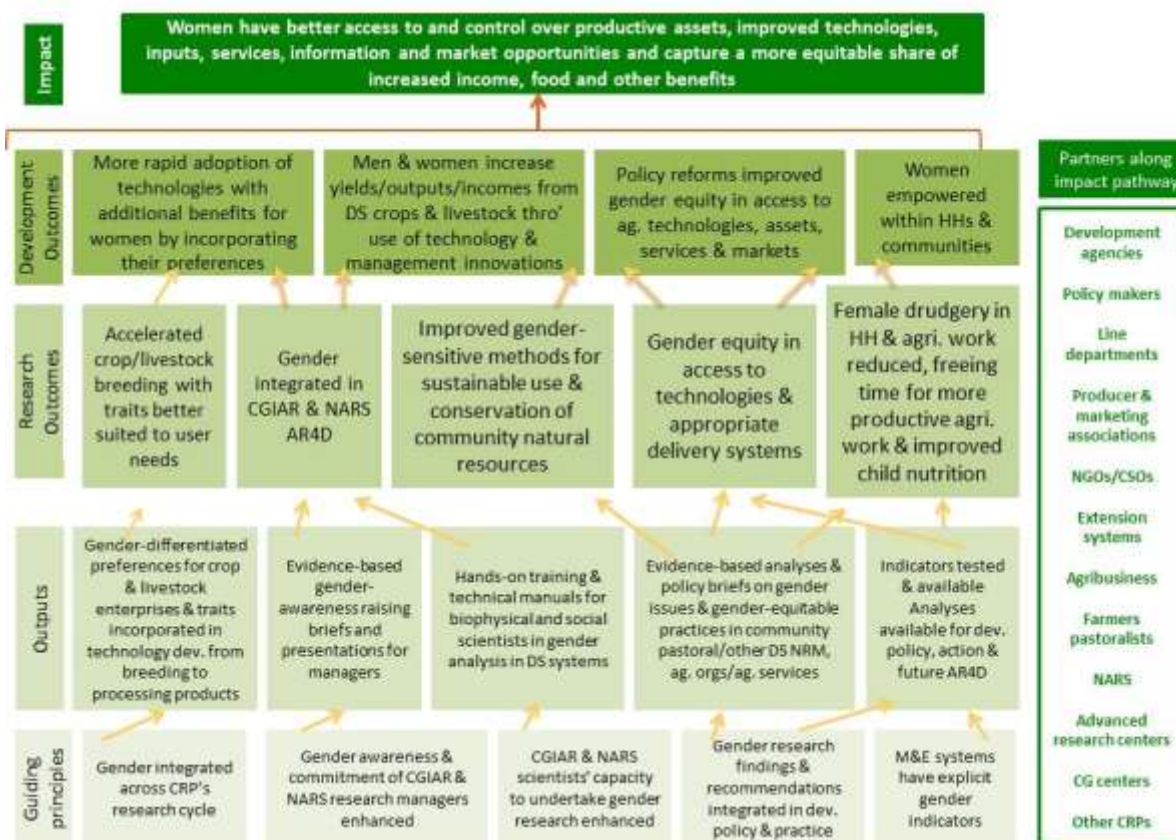


Figure 3: Dryland Systems Impact Pathway

6.2.1 Guiding Principles: The inter-related “guiding principles” are designed to respond to the fact that the DS CRP, the Lead Center and many of its NARS partners have less experience and capacity in gender research than many of the other CRPs and Centers (and possibly their NARS partners). Thus, for gender to be effectively integrated across the DS CRP’s research cycle, it is first essential to enhance the awareness among CGIAR and NARS research managers that unless they incorporate gender considerations into their institutions’ AR4D, they will not meet the DS CRP goals or the CGIAR SLOs. Secondly, many of the scientists (especially biophysical scientists) are likely to need capacity building in gender issues and analysis. Thirdly, appropriate indicators need to be developed to measure results/outcomes and provide feedback loops (to build on strengths/address weaknesses) in the research cycle of future research programs. Within the context of the previous discussion of partnerships for catalyzing transformative change, the Program will pilot some imaginative transformative approaches in 2014-6, based on insightful diagnostic work, PAR methods, and some practical, demand-driven technology development research and dissemination.

6.2.2 Outputs: The proposed outputs in the Impact pathway cover broad categories to respond to the guiding principles and **will need to be “unpacked” in more detail by the Regional/Action Site research teams when they design/implement specific activities.** For example:

Output 1: Gender-differentiated preferences for crop & livestock enterprises & traits incorporated in technology development from breeding to processing products. Sub-outputs to achieve this broader output will include:

- Guidelines for *ex ante* diagnostic analysis including for improved gender-responsive targeting in the Program: target populations sex disaggregated; target groups and gender relations functionally and socially differentiated in value chains and farming systems; their geographical distribution mapped and implications interpreted for different research outputs of the program, so that gender research information is used for the program’s priority setting
- Toolbox for quantitative & qualitative sex- and age-disaggregated data collection & related gender analysis in DS systems
- Methods and tools to characterize gender-differentiated roles and decision-making power in DS mixed farming, pastoral and agro-pastoral systems, and related value chains
- Methods and tools to identify gender issues for technology development and adoption and to identify actionable entry points

Specific activities and related outputs planned for 2014/5 are given in Box 11.¹⁸ They apply to all 5 Regions unless specified.

Box 11: Planned Outputs for Crop & Livestock Technology Development, 2014

Gender-specific preferences of traits for crop varieties/hybrids and livestock breeds integrated in new varieties/breeds (productivity, reduced risk to climatic factors, pests & disease, storage/processing/cooking qualities, taste, quality of feed/fodder by-products). In WANA, specifically for durum and bread wheat, chickpea, lentil and faba bean

Improved management systems for insect pests, diseases, viruses and parasitic weeds in cereal/grain cropping systems by involving the responsible men and women (WANA, WA)

Improved quantity and nutrient quality of feed/fodder for small livestock through the CRP’s gender-sensitive improvement of feed/fodder, e.g. by breeding improved (multipurpose) crop/legume varieties, oilseeds (sunflower, sesame, safflower), fodder (alfalfa, esparit), and management of crop/legume rotations and crop-livestock interactions with labor-saving technologies esp. for weeding & harvesting (esp. CA, WANA, WA)

Improved methods to increase productivity in and incomes from milk, meat and skins processing by women accessing improved gender-responsive technologies developed by CRP

Improved cereal/legume/vegetable seed systems with greater gender equity in seed production and access through improved delivery systems (SA, ESA)

Improved conservation agriculture methods to increase resilience and benefit both men and women without increasing gender inequity in workloads & datasets n results/trade-offs analyzed (WANA, SA)

Improved post-harvest, storage and processing technologies developed/tested by women, esp. for crops, vegetable, fruits and dairy & constraints to adoption identified/addressed

¹⁸ These examples and those in Box 12 are taken from: DS CRP Plan of Work and Budget, Narratives 15 January 2014.

Output 2: Evidence-based analyses, technologies & policy briefs on gender issues & gender-equitable practices in community pastoral/other DS NRM, agricultural organizations and agricultural services: Sub-outputs to achieve this broader output could include:

- Gender-sensitive and equitable dryland crop and livestock productivity-enhancing and land, water, forest and biodiversity conservation technologies
- Better understanding of the effects of norms and gender ideologies on gender roles in community-based organizations (CBOs), and promising practices to reduce women's subordination and give them voice and influence
- Gender-sensitive innovations in service delivery and mechanisms for enhancing women's access to markets, inputs, services, information and finance

Specific activities and related outputs planned for 2014/5 are given in Box 12:

Box 12: Planned Outputs for Gender-Equitable Institutional change, 2014

Technologies & tools for identifying/addressing gender-specific roles & knowledge and strengthening women's voice and decision-making power in pastoral organizations to improve resilience of pastoral systems including adaptation to climatic variability

Improved gender-sensitive water harvesting methods to enhanced water availability for crops, fruit trees (e.g. olives in WANA) & livestock (taking account of competition with domestic needs)

Improved methods for soil conservation to combat land degradation including through deep-rooted plants, crop rotations, to minimize fallow periods, soil surface cover, soil & water management, mulching through harnessing gender-specific knowledge, labor roles/skills and incentives (WANA, CA, WA, ESA)

Improved gender-responsive community-based methods for irrigation for control of salinity and waterlogging, and among nomadic peoples for water resources for fodder production and livestock watering (CA)

Decision-tool developed for gender-responsive collective action to improve land, pasture & water management (SA)

Analyses of gender-differentiated constraints to market access, networks and coops and good practices to strengthen women's roles in and benefits from marketing organizations (SA)

6.2.3 Research outcomes

The CRP's gender-related outputs will be oriented to achieving "research outcomes", that will in turn contribute to "development outcomes". **The linkages between the outputs and research and development outcomes will need to be "unpacked" and elaborated by each of the Regional/Action Site research teams when they design/implement specific activities.** They will draw on evidence-based knowledge that underlies/informs the theory of change.

For example, social norms determine gender-differentiated access to assets, technologies, services; gender-roles and decision-making power; women's and girls' mobility and ability to

operate in public spaces such CBOs and markets; women's and girls' access to schools and training; women's employment opportunities and gender differences in wage rates etc. All these affect women's opportunities and incentives to adopt new technologies. These norms are being changed through external changes processes, deliberate public action, and through advocacy and demand by social and political movements. The CRP will harness improved knowledge of these processes and opportunities to integrate gender-aware and/or gender-transformative goals in its research program.

Another example concerns the differential effects of policy processes, including land and labor market reforms, incentives for adopting new agricultural enterprises and technologies, investments in new markets including roads and market infrastructure, on women and men. Again, the CRP's research programs in different Regions/Action sites will identify entry points that these opportunities bring so that they produce outputs and research outcomes that will contribute to development outcomes facilitated by these policy processes.

6.2.4 Development outcomes

The development outcomes illustrated in the impact pathway in Figure 3 are broad, and will be refined more precisely by each of the Regional/Action site teams for their own research programs, and by IDO. Possible refinements could include:

- Rural women's groups adopted entrepreneurial activities for high value commodities
- Enabling policies for gender equity in agricultural technology and development enacted and implemented
- Women accessed and used agricultural innovations, information, finance and other inputs and services to increase production and productivity, value addition, and incomes
- Rural women have accessed markets (accessible marketing points, post-harvest technologies (including refrigeration and better storage), marketing information, and innovations that encourage inclusiveness)
- Extension, veterinary services and other agricultural service delivery systems adopted policies and programs to explicitly reach women and disaggregate the statistics of their outreach by sex.

6.2.5 Impacts

"Women have better access to and control over productive assets, improved technologies, inputs, services, information and market opportunities and capture a more equitable share of increased income, food and other benefits."

6.2.6 Timeline

- **Years 1-3:** *Ex ante* diagnostic analysis including adapting multidisciplinary methods and tools to identify gender issues, specific knowledge gaps and ways to fill these, and improve targeting (all IDOs, through IDO 8).

Piloting some imaginative transformative approaches, based on insightful diagnostic work, PAR methods, and some demand-driven technology development research and dissemination (mainly in IDOs 1, 2, 4 5, 6, in conjunction with IDO 8). This will also involve developing methods and catalyzing researchers and change agents to bring

about more gender-equitable attitudes and behavior among people who need to change (NARES, CG researchers, other partners and ultimate beneficiaries).

- **Years 3-6:** Interaction between IDOs, designing/implementing gender-sensitive interventions; testing/adapting; developing indicators and undertaking monitoring and evaluation; changed behavior of actors in other IDOs.
- **Years 6-9:** Up-scaling phase; sharing and capturing of benefits; improved participation and leadership by women.

The role of insightful indicators is extremely important in tracking the implementation of the program and all involved scientists and partner organizations will be requested to report on those indicators.

6.3 Integration of Gender Research across the Research Cycle

This section concerns ways in which gender research will be mainstreamed across the whole research cycle of each of the CRP's flagship research programs.

6.3.1 Targeting and priority setting

A major effort will be made to ensure that gender issues are considered at the initial conceptual/planning stage of all the CRP research programs and will only be disregarded if they are not deemed relevant. Care will be taken to formulate Research Questions that address both men and women.

6.3.2 Methods and gender disaggregated data collection

The research will be based on both quantitative and qualitative methods. Baseline data collection and basic research findings will be disaggregated by sex and age, and where possible, by socio-economic category and other relevant social categories (ethnicity, religion etc.). Representative samples of both men and women will be included in the survey populations. Qualitative methods, which often use participatory techniques, can also produce data that can be presented/analyzed in simple quantitative (non-statistical) ways, as well as provide information to interpret the quantitative data and nuanced insights into social and psychological processes. The latter methods are particularly important for capturing an understanding of the outcomes of the research for women's empowerment (following Rowland's typology given in section 2.2).

6.3.3 M&E and feedback loops

Indicators for M&E of the research programs will be developed/agreed in conjunction with the research design, drawing on generic indicators given in Annex 2 of the CO CRP 2012-2013 Annual Report Template and the indicators to be developed in the CRP's overall M&E framework. The information and analysis undertaken of these indicators will be disseminated among researchers (and policy makers and development partners) and the findings and implications for future research incorporated into future research design processes.

7. CORE STAFFING AND INSTITUTIONAL CAPACITY

This section considers i) the availability of core specialist capacity for mainstreaming gender in the DS CRP, and ii) the capacity of non-gender specialists in the CRP who dedicate - or will need to dedicate - time to gender mainstreaming. These will be mainly biophysical scientists, classical economists, and communication experts.

7.1 Core Staffing

As can be seen from Table 1, the Lead Center is in the process of recruiting several core staff on gender issues. Since it has had only 1 Social Scientist/Gender Specialist until the end of 2013 (who is leaving as of 31 January 2014), the Center has not built up a substantial core capacity in gender research, particularly compared with many of the other Centers (CGIAR Consortium, 2013c: 21).

Fortunately some of the Centers participating in the CRP have dedicated some of their gender expertise to the CRP (Table 1). However, many are only contributing a relatively small percentage of their time to the CRP as they are also working with other CRPs. Thus, this expertise will also need supplementing to achieve the ambitious outcomes in the 8 IDOs (some suggestions are given below). It should be noted that some of these Centers might also have gender experts working on bilateral project-based research or on the Center's regular research program or other CRPs, who are not being deployed for the DS CRP. Their work can provide valuable conceptual, methodological or evidence-based insights to the CRP's work as, for example, in the IFPRI-led A4NH and PIM CRPs since IFPRI has some 35 social scientists (CGIAR Consortium, 2013c: 21). Moreover, a larger body of social scientists in a Center can help build the critical mass needed for their voice to be heard in Centers/CRPs that are largely dominated by biophysical scientists.

This sparse socio-economic and gender expertise in the Lead Center so far means that:

- There has been very limited opportunity for (particularly *ex ante*) inter-disciplinary work involving biophysical scientists, economists and social scientists
- Research has largely been *ex-post* field studies of the gender impacts of agricultural interventions and/or studies of social change
- There is a serious lack of sufficient critical mass of experienced core staff capacity to:
 - Work in inter-disciplinary teams to mainstream gender across the CRP
 - Coordinate the gender work in these CRP programs across the CRP's participating CGIAR centers and other partners, and with complementary CRPs (e.g. PIM, A4NH, CCAAS)
 - Undertake strategic gender-related research under IDO 8

Table 1: Core Staffing Capacity for Gender Research and Analysis in the DS CRP

Position type	Name	Full-time staff equivalent (FTE) % & target region*	Qualification (Ph.D., MA, BA)	Main discipline or field	Level of gender analysis & knowledge	Estimated FTE available		
						2013	2014	2015
ICARDA								
Director SEPRP	Aden Aw-Hassan	All/WANA & CA 10 FTE	Ph.D.	Agri-Economics	Very high	10%	10%	10%
Senior Scientist	Under recruitment	WANA & CA 100% FTE gender research	Ph.D.	Sociology	Very high		100%	100%
Socio-Economist	Shinan Kassam	WANA & CA 100% FTE	Ph.D.	Socio-economics	Very high	**	100%	100%
Consultant	Maria Fernandez	WANA (Morocco) 25% FTE	Ph.D.	Rural sociology	Very high		25%	25%
Associate (consultant)	Lejla Sunagic	WANA (Jordan) 100% FTE	MSc	Rural sociology	Very high		100%	100%
Postdoc (under recruitment)	Dina Najar	WANA (Egypt) 100% FTE	Ph.D.	Sociology	Very high		100%	100%
Research Assistant (consultant)	Maria Merzouk	WANA (Morocco)	PH.D	Sociology	Very high		100%	100%
ICRISAT								
Senior Scientist	Chanda Gurung Goodrich	10% SA	Ph.D.	International studies	High	10%	20-25%	20-25%
Scientist/Consultant	Sweta Agrawal	40% SA	M.A.	Sociology	High	40%	40%	40%
Scientist on Special Project	K.H. Anantha	20% SA	Ph.D.	Socio-economics	High	20%	20%	20%

funds								
Scientist on Special Project funds	Rainet Uppal Kaur	20% SA	Ph.D.	Crop physiology	Good	20%	20%	20%
ILRI								
Senior Scientist	Polly Ericksen	20% ESA	Ph.D.	Food security, livelihoods	medium	20%	20%	20%
Scientist	Lance Robinson	70% ESA	Ph.D.	Anthropology, environmental governance, & resilience	Medium	70%	70%	70%
Scientist	Todd Crane	30% ESA	Ph.D.	Adaptation to environmental change	Medium	30%	30%	30%
CIP								
Postdoc	Cecilia Turin	20% Global	Ph.D.	Rural sociology, livelihoods vulnerability	Very high		20%	
IWMI								
Senior Scientist	Barbara van Koppen	20-30% Global & SA	Ph.D.	Poverty, gender	Very high	8%	22%	30%
Scientist	Everisto Mapedza	50% ESA	Ph.D.	Institution Governance	High	50%	50%	50%
Scientist	Kai Wegerich	50% ESA	Ph.D.	Social Sciences	High	10%	50%	50%
Scientist	Mengistu Desalegen	50% ESA	Ph.D.	Social Sciences	High	10%	50%	50%
Consultant/ Associate	Nozilakhon Mukham-	100% ESA	M.Sc.	Gender	High	50%	100%	100%

	edova							
Research Assistant	1 to be recruited	50% ESA	M.Sc.	Social science	Average	50%	50%	50%
ICRAF								
Scientist	Joachim Nyemeck Binam	15% ESA WA	Ph.D.	Socio-economics	High	10%	15%	15%
Associate	Pascaline Lingani-Coulibaly	5% ESA WA	Ph.D.	Sociology	High		5%	5%
Associate	Diaminatou Sanogo	5% ESA WA	Ph.D.	Tree Genetics	Medium		5%	5%
Bioversity								
Senior Scientist	Mauricio Bellon	20% Global & SA, WASD, ESA	Ph.D.	Human ecology	Medium	20%	20%	20%
Other Scientist (Honorary Fellow)	Maria Fernandez	5% Global	Ph.D.	Social science	Very High	5%	5%	5%
Associate	Gervais Ntandou-Bouzitou, Deleuze	20%	Ph.D.	Human nutrition	Medium	20%	20%	20%
Associate	Jeske van de Gevel	10%	M.Sc.	Forestry	To be trained	10%	10%	10%
Research Assistant	Sognigbe N'Danikon	30%	M.Sc.	Ethno-botany	Medium	30%	30%	30%
CIAT								
Senior Scientist	Katherine Snyder	10% WA, ESA	Ph.D.	Social anthropology	Very high	10%	10%	10%
Scientist	Nelson Mango	20% ESA	Ph.D.	Rural dev. sociologist	High		20%	20%
Scientist	Rodah Zulu	5% ESA	Ph.D.	Human nutrition	High		5%	5%

Research Assistant	Ruth Margarita	5% ESA	M.Sc.	Economics	To be trained		5%	5%
WorldFish ***								
Senior Scientist	Paula Kantor Depends if she is transferred to Cairo as planned	***	Ph.D.	City & regional planning, gender & dev., economics	Very high		***	***

* WA (West Africa), ESA (East & Southern Africa), WANA (North Africa & West Asia), CA (Central Asia), SA (South Asia)

** Malika Abdelali-Martini, Ph.D., Social Scientist/Rural Development & Gender Research Specialist, contributed 100% of her time to gender research in 2013, of which 30% was for the DS CRP.

*** The DS CRP and WorldFish have had preliminary discussions on possibilities for undertaking some bilateral projects, for example, in Mali and Egypt. This could be subject to P. Kantor's possible transfer to Egypt with WorldFish

Nonetheless, there are some promising solutions:

1. ICARDA and the Dryland Systems CRP will need to strengthen its core capacity very rapidly. Priority actions would be to:

- a) Identify and enter into partnerships with leading scholars in one or more universities to provide skills training and mentoring in gender analysis and research methods¹⁹ in view of the limited senior gender specialist capacity at present and the need to guide and mentor junior staff.
- b) Take advantage of the CO Gender and Agriculture Research Network's ongoing efforts to develop cross-program research in 4 areas (see point 2 c) and d) below for details). This will provide a lower-cost option to ensure that post-doctoral fellows involved in such programs are able to benefit from working with senior scientists (CGIAR Consortium, 2013c: 23).
- c) Recruit consultants for specific, time-bound tasks when necessary to fill staffing gaps. However, where possible, rely on in-house staff which builds the CRP's and the Centers' capacity and enables them to retain the learning from implementing the strategy.
- d) Provide awareness-raising sessions and training for ICARDA's and partner institutions' biophysical scientists and economists in gender analysis issues. This should be organized together with the other CGIAR Centers participating in the DS

¹⁹ This is already being put into practice by some CRPs; for example, CCAFS, AAS and FTA (CGIAR Consortium, 2013c: 23).

CRP, since some of them have more core staff and/or longer engagement in gender issues.

The aim is not to turn the biophysical scientists into gender specialists but to increase their awareness of the gender issues and give them an adequate understanding of gender and social analysis and the range of related quantitative and qualitative field research methods and tools available. At the same time, this should be a **two-way learning process**, where the biophysical scientists and economists also enrich the understanding of the gender specialists of the issues they are addressing. This mutually supportive inter-disciplinary collaboration is vital to improve the effectiveness and relevance of the inter-disciplinary teamwork that is fundamental to the CGIAR's new way of doing AR4D in order to meet the targets of the multi-dimensional IDOs.

- e) Develop in each of the CRP's 5 regions a core group of Dryland Systems CRP scientists and development partners who have a sound grasp of the issues, are open to learning more, and are deeply committed to gender-mainstreaming within the IDOs. These scientists and development partners will serve as catalysts to inspire change and foster collective actions within their own organizations and research teams, and with partner organizations. Their practical actions could focus on:
 - a. Sharing knowledge and catalyzing discussions among CRP scientists and partners to develop gender-equitable joint AR4D programs, with a focus on *ex ante* identification of the research questions and design
 - b. Engaging in ground-breaking multi-disciplinary research programs that develop, *inter alia*, innovative methods for mainstreaming gender dimensions within specific IDOs and their impact pathways, participating in team efforts to distil and disseminate lessons learned (including for up- and out-scaling), and contributing learning and feedback to the design of subsequent research programs including the formulation of the second round of CRPs
 - c. Awareness-raising and evidence-based advocacy aimed at managers, colleagues, policy makers, donors, the media through a variety of mechanisms including global, regional and national platforms and modern professional and social communication technologies
 - d. Mentoring women and men professionals, especially younger staff

2. The Dryland Systems program will need to fill gaps in core gender-related expertise by bringing in relevant expertise from the other CGIAR Centers and development partners cooperating in the CRP. This is a vital strategy, particularly in the short term, which will also have important synergies for the lead center's efforts to strengthen its core staff capacity. Possibilities include:

- a) Arranging secondments of (full- or part-time) specialists from universities (e.g. a senior Yale professor has been seconded to coordinate/lead the PIM's gender program)
- b) Developing a special relationship with a university, a NARS, a research foundation, an NGO or CSO, or a public/private development agency, to provide specific services, for

example, on M&E indicators, training in gender analysis issues (for example, the AAS partnership with the University of East Anglia which, *inter alia*, runs "summer schools" on gender issues for AAS collaborators), helping develop "tool boxes" specifically tailored to facilitate/guide/strengthen inter-disciplinary gender-equitable research in Dryland Systems

- c) Participating in cross-program research work within the CO Gender Research in Agriculture Network that provides strong potential for increasing research efficiency and maximizing payoff in cases of scarce gender expertise (see CGIAR Consortium, 2013c: 29). The four topics that have been selected so far, all of which are very relevant to the DS CRP, are:
 - a. Gender and value chains
 - b. Transformative approaches to gender research
 - c. Gender issues in innovation and technology adoption
 - d. Nutrition and gender
- d) One of the initial cross- program research activities that was launched in October 2013 is on Innovation through Transformation of Gender Norms in Agriculture and Natural Resource Management". The DS CRP will benefit greatly by engaging in this program.

A key challenge will be how to coordinate these various sources of expertise, and to gain value from the synergies.

7.2 Collaboration with Other Partners

The CRP Proposal stressed strong commitment to developing **strategic partnerships with non-CGIAR specialist institutions**. A number of these are already under way. The following deserve mention:

- **GAP: the multi-stakeholder Gender in Agriculture Partnership (www.gender-gap.net), catalyzed by the Global Forum on Agricultural Research (GFAR), provides a rich network of existing and potential partnerships** between CGIAR gender scientists and other gender specialists and programs around the world (from the UN to national and regional AR4D organizations, extension agencies and networks, civil society, NGO and private sector development organizations, donors and the media). The DS CRP's partnership with GAP will bring benefits from synergies in AR4D efforts – collaboration in developing and testing research tools and methods, and indicators for impact assessment, piloting innovations on the ground, disseminating findings and engaging policy-makers in evidence-based advocacy at the global, regional and national levels for gender-equitable development.
- **YPARD: the Young Professionals' Platform for Agricultural Research for Development (www.ypard.net), will help the DS CRP leverage the participation of Young Professionals in AR4D in all 5 Target Regions.** The initial focus of their contribution will be to help DS CRP scientists and their partners: identify *ex ante* differences in gender issues between young men and women compared with adult men and women that need to be addressed in the research design for all 8 IDOs, contribute to the Young Dryland

Scientists program, including internships and post-doc fellowships for young researchers, and participate in local on-ground events and activities.

- **Africa Harvest: the Africa Harvest Biotech Foundation International (AHBFI) (www.africaharvest.org) will partner with the DS CRP to build on their rich experiences in gender-equitable field work** to drive greater uptake of innovations from farms to markets and reap equitable benefits for all, including higher agricultural productivity and incomes.
- **World Farmers' Organization (WFO): this global organizations can play an important partnership role in disseminating the research findings to policy makers and civil society actors** who are advocating for policy changes at global, regional and national levels to increase gender equity in agriculture.

The DS CRP's gender specialists already collaborate with gender specialists and other scientists in other CRPs. For example, the ICARDA gender specialist collaborated with CIMMYT in developing the gender components of the Maize and Wheat CRPs. There is considerable scope - to be exploited within the DS CRP - to expand collaboration with other complementary CRPs. Although the DS CRP has started some initial gender-related activities, its gender program will get fully underway in the second quarter 2014 once the new gender research team members, under recruitment take up their functions. Thus partnerships with other CRPs will be developed in the course of 2014. Among others, there are obvious commonalities and synergies with the Climate Change, Agriculture and Food Security CRP (CAAFS) since the dryland areas are particularly vulnerable to climate change impacts, and with the Livestock and Fish CRP as pastoral and agro-pastoral systems predominate in drylands. The CRP will develop partnerships with the other 2 systems CRPs (Aquatic Agricultural Systems (AAS) and the Humid Tropics) on methods/learning/collaborative work in developing gender-aware and gender-transformative AR4D within a systems approach. In addition, the DS CRP will develop partnerships with the Agriculture for Nutrition and Health CRP (A4NH) in connection with IDO 3 and with the Policies, Institutions and Markets CRP (PIM) with regard to understanding the broader change processes within which the DS gender strategy will be implemented, and in contributing to its IDO 5 on markets.

8. MANAGEMENT SYSTEM

The following description of the management system for the Gender program should be seen within the context of the overall CRP Governance and Management system that is summarized in Annex 4.

8.1 The Functions of Gender Specialists within the CRP

The Gender crosscutting themes are under the direct supervision of the DS CRP Director, whose office retains the budget for dedicated research under IDO 8. Since gender must be mainstreamed within the other 7 IDOs, direct responsibility will fall to the Regional Coordinators (RCs) and the IDO Leaders, under the overall supervision and responsibility of the CRP Director.

The functions of the Gender Specialists in the CRP, and the management system in which they will operate, are as follows:

a) Gender Coordinator

As recommended in the Consortium Office's Assessment of the Status of Gender Mainstreaming in CGIAR Research Programs (2013) and already put into practice by some CRPs, the Director's office will need (at least) 1 full-time Gender Coordinator reporting to the Director. S/he will:

- i) Coordinate actions to ensure effective gender mainstreaming within the IDOs. This will involve coordination among: a) CGIAR and non-CGIAR partners within the DS CRP and b) other CRPs that are complementary to the DS CRP.
- ii) Design and undertake strategic research (with partners within and outside the CGIAR system) on gender issues under IDO8.

b) Gender Focal Points

The Gender Coordinator will work in close consultation with Gender Focal Points (FPs) in each of the DS CRP's 9 participating CGIAR Centers. There will be a need to distribute the FPs also among the Interdisciplinary Research Teams (IRTs) in each of the 5 Target Regions, and in each of the 8 IDOs. While each participating Center will need to appoint its FPs (hopefully among volunteers so that the FPs are truly committed), it would be possible for non-CGIAR partners to serve as FPs on the IRTs and in some IDOs (but not the strategic IDO 8). For management purposes, a matrix of the distribution/multiple roles of the FPs will be developed and shared among the CRP participating centers and partners. While the Gender Coordinator will be a full-time scientist with a contract of at least 3 years (renewable), the role of FPs could rotate among suitable and committed scientists in the different Centers and partner organizations, if deemed desirable.

At the Center level, the Gender FPs will be responsible for catalyzing/facilitating the development of annual work plans that mainstream gender within their Target Region(s) of work and within the 8 IDOs, supporting and engaging directly where appropriate in their implementation. Specifically they will:

- Work with biophysical scientists and economists to develop integrated AR4D that incorporates gender dimensions
- Develop tools and methods for incorporating gender issues into interdisciplinary R4D, and provide/organize awareness-raising and training/guidance in their use
- Conduct strategic research on gender
- Disseminate findings and strengthen networking/collaboration with gender researchers in partner organizations
- Participate in the CGIAR Gender and Agriculture Research Network, and the multi-stakeholder Gender in Agriculture Partnership (GAP) that is facilitated by GFAR
- Provide semi-annual and annual reports on progress, to be submitted to the Gender Coordinator, and subsequently to the CRP Director and the Center Management

c) Cross-CRP Working Groups of Focal Points on Gender

The FPs will form a cross-CRP Working Group (WG), convened by the Gender Coordinator. The WG will develop common or complementary methods and approaches to support strategic research on gender issues within the CRP, and ensure that gender dimensions are addressed in all the IDOs and Target Regions in line with this strategy. Where appropriate, the WG will

collaborate to address the gendered nature of the differential issues affecting young men and young women. The WG will also develop criteria for assessing analytical work, indicators and methods for quality *ex ante* and *ex post* impact assessment and the M&E of the gender CRP-wide activities. In carrying out these activities, the WG will draw on the experiences and good practices of other CRPs shared through the CGIAR Gender and Agriculture Research Network, and will also contribute, where appropriate, to the Network's joint activities. Following the experience of other CRPs (for example, the Water, Land and Ecosystems CRP which has a Gender Working Group with about 10 scientist Focal Points) the WG will meet, ideally at least once a year (back-to-back with another CRP meeting if possible), to discuss issues, ways of resolving problems, and emerging issues and priorities.

d) Regional Coordinators and IDO Leaders

The Regional Coordinators (RCs) will be tasked to interact with and draw on the contributions, advice and recommendations of the FPs in their Target Region, and the cross-CRP Working Group. They will also be expected to provide the FPs and WG with information and guidance on the Regional research priorities and appoint at least one gender FP to each Regional Interdisciplinary Research Team (IRT) so they can contribute to the IRT's priority setting and activity planning.

Similarly, each IDO Leader will be required to work with the Gender FPs assigned to their IDO, to ensure that gender issues are addressed effectively in the IDO.

8.2 Multidisciplinary Research Teams

Since the overriding challenge for the DS Program is to integrate gender into the *ex ante* definition of the research questions (RQs) and research design, it will be vital to set up a series of (*ad hoc*, time-bound) multidisciplinary teams of biophysical scientists representing a range of specializations, economists, sociologists, anthropologists and gender specialists and some development partners. Their mandate will be to work together to identify for each of the IDOs (and Target Action/Satellite Sites) a range of inter-related technical, economic and social issues, as well as the gender constraints and opportunities. This will have to be approached on the basis of mutual respect for other disciplines, with no discipline assuming the lead. To meet such a challenge, the CRP will need to develop new, innovative analytical tools and methods to facilitate this type of inter-disciplinary "talking" and "understanding", complemented by new research tools and methods to "walk the talk" in the field research work.²⁰ These multidisciplinary teams will also be better equipped to carry out *ex post* assessments of the gender impacts of new technologies, productive methods or market opportunities that have hitherto been largely conducted by gender specialists.

8.3 Role of Center Management and Operational Structures and Processes

While the Gender Coordinator should report directly to the CRP Director, many of the social scientists and economists working on gender issues, or the biophysical scientists who are expected to mainstream these issues into their research, belong to either the Lead Center (ICARDA) or one of the other 8 participating Centers. As such, their main reporting lines are to

²⁰ The CRP will develop a toolbox for dryland systems, drawing on existing tools and preparing additional tools, as needed. Such a toolbox could be organized as a series of inter-disciplinary, self-contained modules that could be expanded over the life of the CRP.

their Department heads, and ultimately to their Director-Generals, although they report to the CRP Director on CRP-related work. These mixed reporting lines could potentially lead to conflicts, and as the CRP Director reports to the Lead Center DG, the role of the Center DG and Senior Management is critical in ensuring a coherent approach and management ethos, and in ensuring accountability among all scientists for mainstreaming gender.

The Center Boards of Trustees also have a potentially key role in ensuring that the gender strategy and the related implementation activities reflect the main priorities of the research users, and are carried out in a scientifically rigorous and effective way. Since they are detached from the daily routine of CRP implementation, they are well placed to bring a broader perspective to their deliberations, advice and decisions.

8.4 Accountability

CRP managers and researchers will be held accountable for achieving the research outcomes and impacts (including on gender) to which they have committed, in compliance with the CGIAR's reform 2011 Strategy and Results Framework. Accountability will be ensured through the following mechanisms:

a) The Director-General of the Lead Center carries the overall accountability for the CRP governance, fiduciary oversight and financial management through the Lead Center's contract with Consortium Board. S/he is also accountable to the Consortium Board for delivering on the Gender Strategy.

b) The CRP Director, who is a staff member of the Lead Center and is responsible for day-to-day management, is in turn accountable to the Director-General for delivering on the CRP in general and on the Gender Strategy in particular. The budget for strategic Gender Research under IDO 8 is allocated to the CRP Director's Office, and s/he will be accountable for its use.

c) Regional Coordinators (RCs) will be accountable for the delivery by their Regional team on the strategic gender research that will be undertaken under IDO 8. Priority will be given to agreeing on 1 or 2 major crosscutting gender research programs for each 3-year period of the CRP. These would be implemented simultaneously in all 5 Regions to maximize cross-region comparative analysis and learning, and thus impacts. The choice of crosscutting inter-regional research programs will be agreed by the Research Management Committee (RMC), either at its annual meetings or virtually. The CRP Director will then transfer the relevant budget to each Regional Coordinator annually, and the RC will be accountable to the Director for its use in meeting the agreed program outputs.

d) The IDO leaders will also be accountable to the CRP Director for mainstreaming gender in each IDO, using the IDO budgets.

e) The individual researchers will be accountable to the Regional Coordinators (or the IDO leaders) for integrating gender issues in his/her research work. The annual performance appraisals offer a valuable opportunity to ensure this accountability at the individual level. This can be reinforced by incentives such as special (annual) prizes for recognition for outstanding work in mainstreaming gender, and increased budgets for future research work.

8.5 Links to the CRP Governance and Management Structure and Processes

Several of the CRPs have appointed their Senior Gender Coordinator as a member of the CRP Research Management Committee (RMC).²¹ Since gender is a crucial crosscutting theme in the DS CRP, **the Gender Coordinator will be a RMC member.**

Furthermore, the Independent Science Advisory Committee that reports to the DS Steering Committee on the scientific quality and relevance of the DS research program will have one or two gender experts among its cadre of independent AR4D experts.

8.6 Decentralized Management

The DS CRP is also pioneering a decentralized management mechanism to the 5 Target Regions which involves, *inter alia*, developing close links with the national research system-hosting institutions of different components of ICARDA's and the DS CRP's programs. This is partly a pragmatic solution to the unique challenges confronting ICARDA due to the Syrian situation. However, it is also proving an innovative opportunity to develop synergies across CRP components and the programs of the hosting/collaborating national and regional research systems, and to strengthen the latter's ownership of the DS CRP. This mechanism is expected to strengthen inter-institutional synergies also with regard to gender research.

9. MONITORING AND EVALUATION

9.1 The DS CRP's M&E Strategy

Work on developing the detailed plan for M&E of the Gender Strategy was initiated in November 2013 and is still ongoing. The plan will be nested within the overall CRP M&E strategy that is currently being developed, and will also draw on and be consistent with the CO's indicators listed in their reporting requirements for the CRPs' Annual Reports. At this preliminary stage, we draw on the indicators given in the Annex 2 of the CO CRP 2012-2013 Annual Report Template, and the analysis and recommendations given in the CGIAR Consortium's Assessment of the Status of Gender Mainstreaming in CGIAR Research Programs (2013c: 26-27). The CO's Gender Research Network is also facilitating interchange among gender specialists in the CRPs to share experiences²² in developing and using indicators, with the aim of developing more systematic M&E to guide and assess gender mainstreaming.

9.2 M&E Framework

Since the DS CRP M&E framework and associated indicators is still under development by the CRP scientists, the following principles and types of indicators that will be developed are **indicative**. The M&E framework for the Gender Strategy will monitor gender integration at four levels:

²¹ For example, Dryland Cereals, Water, Land and Ecosystems (WLE), Livestock and Fish, Aquatic Agricultural Systems (AAS), Climate Change, Agriculture and Food Security (CCAFS)

²² Specific, measurable, attainable, relevant and time-bound objectives are key.

1. Gender integration processes

This will focus on identifying the effectiveness of awareness-raising and participatory processes among concerned actors (biophysical scientists, classical economists, social scientists, managers, development workers) in CGIAR and non-CGIAR partner organizations, with priority given to integrating gender issues into the R4D design and its implementation, and in piloting promising innovations. Attention will also be given to assessing whether capacity building and training initiatives are effective in building gender-relevant knowledge and skills. The Program will monitor these processes especially using scientists' and partners' self-evaluations and feedback (possibly by an e-survey), and qualitative group discussions or individual interviews by M&E experts.

2. Research outputs and outcomes

Drawing on the Impact Pathway (Figure 3), this will focus on measuring, *inter alia* (using both quantitative and qualitative methods) the following:

- a) The extent to which gender is integrated into research design through:
 - Collection and use of sex- and age-disaggregated data (e.g. from baseline surveys)
 - Application of gender analysis, in the context of wider socio-economic structures and relationships and the changes/trends these are undergoing
 - Inclusion of issues of and trends in social norms, attitudes, behaviors that can influence aspirations and needs, and preferences for and adoption of innovations

- b) The extent to which the outputs reach the intended outcomes: i.e. the extent to which the outputs:
 - Are based on sound sex- and age-disaggregated data
 - Are disseminated through partners and networks to reach a wider range farmers, producers/processors, and entrepreneurs, and feedback from communities, and from men and women of different household typologies (socio-economic and educational status, stage in life cycle etc.)
 - Influence policy makers and the AR4D community.

3. Impact analysis

This will focus on the extent to which the research has achieved the CRP Strategy's overall goal: **to promote more gender-equitable development in dryland systems that enhances wellbeing and resilience**, as well as the CGIAR SLOs: reduced rural poverty, improved food security, improved nutrition and health and sustainably managed natural resources.

Also drawing on the Impact Pathway (Figure 3), this will focus on measuring, *inter alia* (using both quantitative and qualitative methods) the following:

- Women's increased (or reduced) access to productive assets, services and technological innovations
- Women's empowerment, including increased control over their own labor and its products/income
- Gender equality in decision-making processes in community and agricultural organizations

- The influence on policy makers to change policies (including incentives), laws (e.g. on land ownership/use rights, inheritance rights, labor market reforms) and administrative procedures

4. The institutional architecture for integrating gender

This will focus on assessing the extent to which, for example:

- CRP scientists and managers with responsibility for gender in the CTRP's outputs have written TORs specifying these gender-related responsibilities
- Procedures are defined and used to report use of available diagnostic or baseline data on gender in designing CRP's flagship research products
- CRP M&E system has a protocol for tracking progress on integration of gender in research
- Proportion of women participating in research teams and research management
- Proportion of the CRP budget spend on gender-aware and gender-transformative research
- Proportion of capacity strengthening dedicated to developing gender expertise
- Proportion of women benefiting from capacity strengthening

9.3 M&E Implementation Arrangements

This M&E plan will be implemented through the CRP's existing organizational structures and processes. The results will be shared at annual CRP scientists meetings and also in annual CGIAR meetings. The findings will also be fed back to the participating CGIAR and non-CGIAR scientists and other partners (governments, CSOs, NGOs, producer organizations, UN etc.). The collaborating organizations/networks, of GAP, YPARD and Africa Harvest, will play special roles in disseminating the findings, to influence policy-makers, development practitioners and researchers in a wide range of organizations.

10. BUDGET

The guiding principle is that allocations for gender-specific research should be 10 percent of the total Windows 1 and 2 funding. Since 2013 was the start-up year, and there was a delay in launching the Gender Strategy, the percentage allocated to strategic gender research in 2013 was 7 percent, which translated into US\$ 400,000. This was used for IDO 8 AR4D activities.

However, the Windows 1 and 2 funding for 2014 has a total anticipated envelope of \$16.75 million,²³ of which \$700,000 has been allocated to strategic research on gender under IDO 8 (Table 2). An additional \$1,085,468 is allocated to gender mainstreaming in IDOs 1-7 in 4 of the 5 Flagship Regions (no gender activities are foreseen in the Central Asian Region). This translates into a total of \$2,085,468 for gender research, representing 10.5% of the total W1/W2 funds for research (i.e. net of allocations for Governance and Management and Regional Coordination – see Appendix Table 2).

²³ For details of the 2014 budget, see DS CRP, Plan of Work and Budget 2014, Narrative 15 January 2014.

At present, the anticipated W1/W2 allocations are only available at the level of the Regions, and not at the IDO level. It may prove difficult to disaggregate the IDO budgets to identify a specific amount for gender since gender issues will be intertwined with the other IDO activities. For example, baseline survey data will be sex- and age-disaggregated and it would be very difficult to identify realistic costs of incorporating sex/gender- and age-related questions in the design, implementation, and analysis of the survey results.

While no W3 funds are foreseen at present for 2014, the projected allocations for mainstreaming gender research in the same 4 Flagship Regions under Bilateral funding are \$873,969, representing 4.1% of a total Bilateral portfolio of \$20, 959, 871. **Added together, this translated into 14.6% of total W1/W2 and Bilateral funding for gender research in 2014.**

Table 2: Planned CRP Gender Research Budget 2014

DS-CRP Gender Budget	W1&2	W3	Bilateral	Total
Strategic Gender Component (IDO 8)	700,000			700,000
Gender Activities in the WANA Flagship	538,000	-	600,000	1,138,000
Gender Activities in the CA Flagship	-	-	-	-
Gender Activities in the SA Flagship	504,868		178,969	683,837
Gender Activities in the WA Flagship	250,000		30,000	280,000
Gender Activities in the ESA region	92,600		65,000	157,600
Total	2,085,468	-	873,969	2,959,437

The provisional budget figures for 2015 are similar to those for 2014.²⁴ The main difference is an anticipated rise in W1/W2 funding to \$20 million in 2015, permitting an increase in funding for strategic gender research (IDO 8) to \$1 million with an additional \$1,385,468 allocated to gender mainstreaming in IDOs 1-7 in 4 Regions (Central Asia remains an exception). This translates into \$2,385,468, representing 12.5% of the total W1/W2 funds for research (Table 3). In addition, the projected allocations for mainstreaming gender research under Bilateral funding are \$873,969, representing 4.1% of a total Bilateral portfolio of \$20, 959, 871. **This translates**

²⁴ For details, see DS CRP, Plan of Work and Budget 2015, Narrative 15 January 2014.

into a combined budget for gender research of 16.6% of the total W1/W2 and Bilateral funding in 2015.

Table 3: Planned CRP Gender Research Budget 2015

DS-CRP Gender Budget	W1&2	W3	Bilateral	Total
Strategic Gender Component	1,000,000			1,000,000
Gender Activities in the WANA Region	538,000	-	600,000	1,138,000
Gender Activities in the CA region	-	-	-	-
Gender Activities in the SA region	504,868		178,969	683,837
Gender Activities in the WA region	250,000		30,000	280,000
Gender Activities in the ESA region	92,600		65,000	157,600
Total	2,385,468	-	873,969	3,259,437

Tables 2 and 3 do not provide staffing costs - either of ICARDA's or the other Centers' gender specialists working on the CRP. More detailed reporting currently being developed and put in place by the CO is likely to provide breakdowns on these investments in the future.

11. RISKS AND CONDITIONS

This Strategy faces a number of risks that could compromise its successful implementation and undermine the CRP's attainment of its targets. These are elaborated below:

1. Until the end of 2013, the Lead Center had only 1 Gender Specialist (who is leaving as of 31 January 2014). The Center is currently recruiting several core staff for the gender program (Table 1). **Since these new staff are expected to take up their posts in early 2014, possibly before the new CRP Director has been appointed, they will need careful guidance from the Director of the Social, Economics and Policy Research Program (SEPRP) and/or his senior scientists.**

2. Since the Gender program will require very considerable coordination among the 5 Regional Coordinators, and among the 8 Centers and other partners, it is essential that the Senior Scientist who is being recruited undertake this coordination role for inter-regional strategic research under IDO 8 and for mainstreaming gender throughout the other 7 IDOs. S/he should report directly to the CRP Director, working in his/her immediate office. However, s/he may need to report to the SEPRP Director on her/his technical research work (to whom s/he is responsible under the advertised TORs). **Cross-reporting lines would seriously undermine efficiency, and this issue of reporting needs to be agreed quickly by the Lead Center.**

3. The Consortium Board's decision that gender should be mainstreamed throughout all the CRPs means that gender work is not negotiable. However, there is a high risk that many managers and scientists will continue to see gender as a "soft" add-on, to be undertaken mainly by women social scientists. Thus many biophysical scientists and economists may attempt to continue with "business as usual", arguing that gender is not relevant to their research work. The implementation of the following conditions, *inter alia*, is vital to change this attitude set and catalyze a body of gender-aware and informed scientists (and their partners) to develop innovative approaches and methods for mainstreaming gender issues:

a) There is an overriding need for a **"culture change" both within and led throughout the collaborating institutions by top management.** The key message is that "gender" is about relations between men and women, and not about "women", and that gender issues pervade the farming system and household livelihood systems.

b) **Scientists need both incentives and sanctions to mainstream gender in scientifically rigorous and relevant ways.** Incentives can include recognitions, prestigious awards, and increased research funds. However, these will not have a major impact without sanctions. These must include, as a minimum: the inclusion of gender mainstreaming in the TORs of every scientist and manager, against which they will be evaluated in their annual performance appraisal reports. Every DS research proposal submitted to the CRP Management Committee should automatically include gender mainstreaming. If a proposal does not do so, the submitting team would have to justify why (in their view) gender is not relevant.

c) **Senior managers must put in place the mechanisms (and related funding) to ensure that scientists and managers can acquire the capacity to comply with the Board's decision regarding gender mainstreaming.** Such mechanisms could include:

- Capacity building courses/workshops
- Development of a tool box with a range of multi-disciplinary methods and tools for integrating gender issues into the Dryland System's programs
- Promoting inter-disciplinary team work in the field, for "learning by doing"
- Mentoring (with mentors drawn from within and outside the CRP)

4. The very skewed income distribution and inequality as measured by the Gini Index for the CRP's target countries (Appendix Table 3)²⁵ raises serious questions about the political and

²⁵ These income and inequality figures are not disaggregated by rural/urban or by gender and age. However, other evidence shows that the situation is usually much worse in rural areas, and for women and youth (e.g. World Bank, 2009).

economic feasibility of achieving IDOs 1 and 2 on a large scale. With the exception of Azerbaijan where inequality more than halved between 1995 and 2005, the top 20 percent of all the other countries' populations control between 40 to 78 percent of the national incomes, with Gini indexes ranging from 30 to 67 per cent in 2005. In contrast, the poorest 20 percent of the populations control between 1.5 percent (Namibia) to 9.3 and 9.7 percent of the national income in Egypt and Pakistan respectively. These are likely to include the target group for IDO 1. Even the quintiles 2 and 3 have only a modest increase in the share of national incomes (Ortiz and Cummins, 2011, Annex 2), which indicates that they have relatively little scope to embark on costly (and especially risky) developments. The income disparities and inequality levels are particularly striking (and worrying) in Sub-Saharan Africa *despite decades of so-called poverty-alleviation policies and programs*.

These global country figures give an idea of the unpropitious environment in many of the target countries in which the DS CRP is working, and the challenges it will face to upscale its program to have a major impact. The risk can be reduced by sharing the research findings with policy makers (and other key actors) to show, with convincing data, that investment in and political support for socially- and gender-equitable AR4D contributes substantially to the overall development of the country, reduces poverty, and improves food security. In doing so, it also lessens the frustration of the poor and especially unemployed youth, thus reducing the risk of civil unrest and protest.

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Annex 1: Abbreviations and Acronyms

A4NH	Agriculture for Nutrition and Health
AR4D	Agricultural Research for Development
CBO	Community-Based Organization
CCAFS	Climate Change, Agriculture and Food Security
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro Internacional de Agricultura Tropical
CIP	Centro Internacional de la Papa
CIPE	Center for International Private Enterprise
CRP	CGIAR Research Program
CSO	Civil Society Organization
DS	Dryland Systems
FAO	Food and Agriculture Organization of the United Nations
FARA	Forum for Agricultural Research in Africa
FP	Focal Point
GAP	Gender in Agriculture Partnership
GCARD	Global Conference on Agricultural Research for Development
GCWA	Global Conference on Women in Agriculture
GFAR	Global Forum on Agricultural Research
GFRAS	Global Forum on Rural Advisory Services
ICARDA	International Center for Agricultural Research in the Dry Areas (CRP 1.1 Lead)
ICRA	Centre International pour la Recherche Agricole orientée vers le développement
ICRAF	World Agroforestry Center
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDO	Intermediate Development Outcome
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
IRT	Interdisciplinary Research Team
ISPC	Independent Science and Partnership Council
ILRI	International Livestock Research Institute
IWMI	International Water Management Institute
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MENA	Middle East and North Africa
NARS	National Agricultural Research Systems
NGO	Non-Governmental Organization
NRM	Natural Resource Management
PAR	Participatory Action Research
PIM	Policies, Institutions and Markets
POWB	Program of Work and Budget
RC	Regional Coordinator
RUFORUM	Regional Universities Forum for Capacity Building In Agriculture
SC	Steering Committee
SLO	System Level Outcomes
SMEs	Small and Medium Enterprises

SRF	Strategy and Results Framework
SRT	Strategic Research Theme
SSA	Sub-Saharan Africa
TRIP	Target Region Implementation and Partnership
UN	United Nations
VC	Value Chain
WANA	West Asia and North Africa
WFO	World Farmers' Organization
WFP	World Food Programme
WG	Working Group
YPARD	Young Professionals' Platform for Agricultural Research for Development

Annex 2: Action and Satellite Sites in the 5 CRP Regions

1) West African Sahel and the Dryland Savannas:

Action sites: the Kano–Katsina–Maradi (KKM) action transect and the Wa–Bobo–Sikasso (WBS) action transect.

Satellite sites: Cinzana, Fakara, Ouahigouya, and Tolon-K.

2) East and Southern Africa:

Action sites: Ghanzi and Kweneng in Botswana; Vryburg and Kuruman in South Africa; Karas in Namibia; the triangle from Garissa in Kenya to Borana in south-central Ethiopia to the Somali region in southeast Ethiopia; the Chinyanja Triangle covering Zambia, Malawi, and Mozambique; the Oromia zones of East Shoa, West Shoa, and Horagudru, and the Amhara zone of North Shoa; and Kajiado–Serengeti–Shinyanga in southern Kenya and northern Tanzania.

Satellite sites: Baringo (Kenya), and Geregera, Afar, and Koneba (Ethiopia).

3) North Africa and West Asia:

Action sites: Jordan–Syria, Meknes–Saiss (Morocco), and the Nile Delta (Egypt).

Satellite sites: Beni Khedache–Sidi Bouzid (Tunisia) and the Karkheh River Basin (Iran).

4) Central Asia and the Caucasus:

Action sites: the Aral Sea, Rasht Valley, and Fergana Valley.

Satellite sites: the Kura-Arax plain in Azerbaijan and the Kashkadarya province in Uzbekistan.

5) South Asia:



Action sites: Jodhpur, Barmer, and Jaisalmer in Rajasthan, India; Bijapur in Karnataka, India; and Anantapur and Kurnool in Andhra Pradesh, India.

Satellite sites: Chakwal in Pakistan and Maharashtra/Madhya in Andhra Pradesh, India.

Source: CGIAR Research Program on Dryland Systems. Inception Phase Report, 2012:13-15.

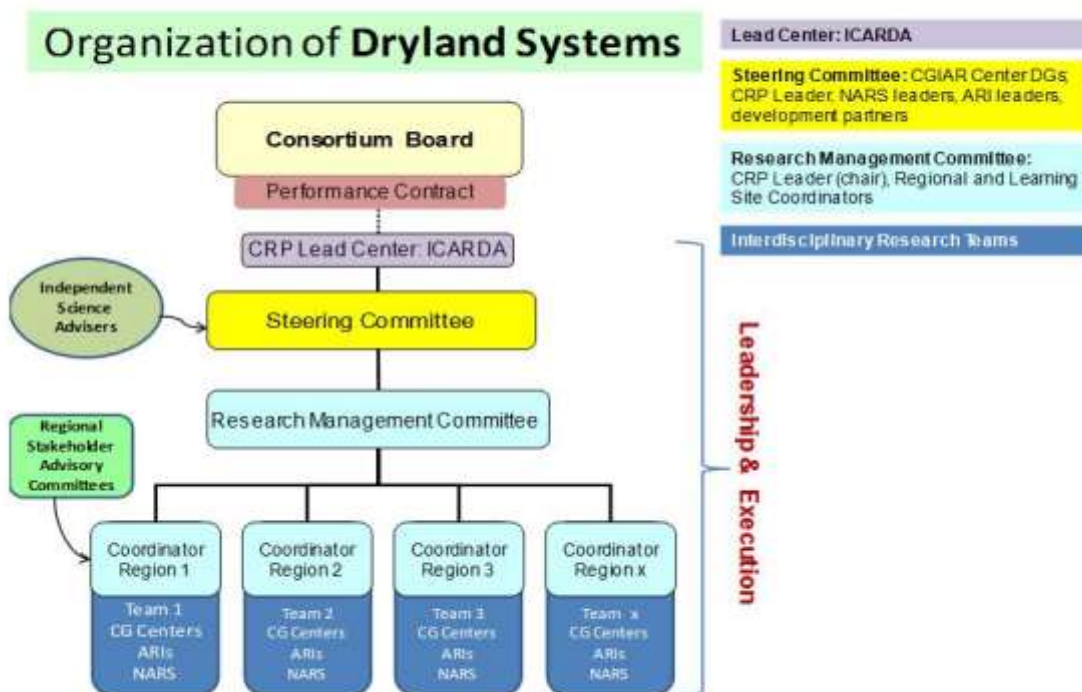
Annex 3: Gender constraints, inequalities and opportunities for change

Gender-specific constraints	Gender inequalities	Opportunities to surmount constraints & inequalities
Reproductive work limits the kind of work rural women and girls can do	<p>Men tend to have wider choice of agricultural and non-agricultural job options, women are often restricted to agriculture near the home</p> <p>Women mainly work as self-employed or unpaid family labor</p> <p>Innovations adopted by men can increase female labor burden disproportionately</p>	<p>Develop/introduce drudgery-reducing equipment for women's domestic chores (incl. clean water)</p> <p>AR4D for women's crops/livestock/fish and VA enterprises</p>
Norms and values about "appropriate" work for women/men, girls/boys	<p>Gender segregation by economic sector, employment status, agricultural activities</p> <p>In agro-industries women usually occupy unskilled, casual jobs without social benefits and men the technical, supervisory, managerial jobs with benefits</p> <p>Men agricultural wage workers usually better paid/higher returns for work of comparable value</p>	<p>Awareness-raising about women's roles & contributions at all levels (R4D, govt., CSO & private orgs, communities etc.) to change attitudes</p> <p>Skills, management and leadership training for women</p> <p>Labor market reforms</p> <p>Wage legislation</p> <p>Introduce public works with equal pay for comparable work - gives women alternatives and changes social attitudes</p>
Cultural restrictions on women's & girls' mobility, and participation in mixed sex school classes, agricultural training, cooperatives etc.	<p>Women & girls often unable to go to markets, so male relatives may sell and keep incomes from women's products; girls more likely to drop out of school; adult & young women low participation in agri. training, coops etc.</p>	<p>In depth social analysis. Identify socially acceptable change. Raise awareness from comparison with culturally comparable but more gender-sensitive societies. Identify change agents among women & men.</p> <p>Bring markets nearer to women (e.g. coops with collection points near homes/villages); direct payments into women's bank, coop or post office accounts; single-sex classes (and toilets) in cultures where this is important; group training near villages at suitable hours for women, using female trainers where possible</p>
Gender-intensified constraints	Gender inequalities	Opportunities to surmount constraints & inequalities
Civil law, religious and customary land ownership and inheritance	<p>Women tend to work smaller plots than men, have fewer animals (mainly small ruminants or poultry) or work as unpaid family labor</p>	<p>Change laws</p> <p>R4D to increase women's productivity or adopt high value "niche" enterprises</p>

systems almost always favor men			that require little land; promote loans or leases of land, fish ponds etc. for women's group enterprises
Women generally have less access to education, skills training, finance, agri. services & inputs, technology, health care, labor		Women are less able to adopt improved technologies or inputs Gender gap in productivity and output that has huge costs for the nation and households	Legislation and administrative measures to reduce gender gaps Participatory action AR4D that involves and trains women & girls
Customary and religious beliefs and practices and civil laws regard women as "dependent" on men		Women & girls may need male relative's permission to undertake wage labor Women's & especially girls' wages paid to male relative Banks require male signature for women's loans	In depth social analysis. Identify socially acceptable change, and change agents among women & men. Change laws, bank procedures and attitudes Arrange direct payment into women's bank, coop or post office accounts
Cultural prohibitions on women & girls attending community meetings		Lack of voice in community and agricultural institutions Women's and girls' needs and knowledge often ignored in community & agricultural organizations	In depth social analysis. Identify socially acceptable change and change agents among women & men. Govts./projects to make quotas for female representation on agri. bodies e.g. water user associations Provide women & girls leadership and public speaking skills, to raise their self-confidence and authority AR4D that support women-only agri. organizations, self-help groups, coops
Gender-imposed constraints		Gender inequalities	 Opportunities to surmount constraints & inequalities
Public sector may discriminate though can also offset or transform inequalities		Women and girls may need male relative's signature on legal acts Extension services may neglect women Governments may neglect women and girls in land titling programs	Change laws and administrative procedures Promote joint husband-wife land titling Reform extension to address women's and girls' needs

Annex 4: Governance and Management of the Dryland Systems CRP

Governance and management



Lead Center: responsible for governance, fiduciary oversight and financial management through contract with Consortium Board.

Steering Committee (SC): provides strategic oversight, responsible for direction, monitoring, and resource allocation. SC chaired by DG of Lead Center.

Research Management Committee (RMC): responsible for overall coordination and management of research agenda. Chaired by CRP Director and consists of coordinators of interdisciplinary research teams (IRT) for each Target Region. Manages human resources, finances and administration in communication with partner organizations in each IRT.

Independent Scientific Advisors (ISAs): provide the SC advice and suggestions on relevance and quality of proposed and ongoing research.

CRP Director: appointed by Lead Center in consultation with the Steering Committee. Provides crucial leadership role in the R4D agenda with the SC and RMC. Responsible for CRP management, aided by small management office, ensuring achievement of outputs, reporting to SC and Consortium Board through DG of Lead Center, public representation of the CRP, and resource mobilization.

Regional Coordinators (RCs): part-time appointments to coordinate Interdisciplinary Research Teams (IRTs) in each Target Region.

Regional Stakeholder Advisory Committees (RSAC): provide channel for input and dialogue with RMC and SC. Representatives of intended users of CRP outputs in each Target Region mix of constituencies covering policy, public research, development, NGOs, CSOs, CBOs and land users). Appointed by SC to comment on relevance and effectiveness of partnership arrangements, priority R4D needs and knowledge gaps, and facilitate reaching policy- and decision-makers.

IDO Leaders: provide overall leadership of an IDO, reporting to the CRP Director (draft TORs discussed by the SC on 16 September 2013; final version still to be approved).

Source: W. Payne, 2013, Power point "Governance and Budget Principles".

Appendix Table 1: Agricultural share of economically active population and female share of economically active in agriculture in 1980, 1995 and 2010 for the DS Program's target regions/countries

Region/country	Economically active population					
	Agriculture share (% of total)			Female share of economically active in agriculture (%)		
	1980	1995	2010	1980	1995	2010
West Africa						
Burkina Faso	92.2	92.3	92.1	46.7	48.1	47.7
Ghana	61.6	58.2	54.5	45.6	45.1	44.3
Mali	88.3	83.0	74.9	36.6	35.9	37.7
Niger	90.2	87.2	82.9	36.5	36.1	36.6
Nigeria	53.9	38.0	24.9	36.6	34.8	39.7
East & Southern Africa						
Botswana	61.4	44.9	42.2	46.6	52.4	56.9
Ethiopia		84.4	77.3		43.0	45.5
Kenya	82.2	77.6	70.6	49.0	49.5	48.6
Malawi	87.4	85.1	79.1	56.7	56.1	59.2
Mozambique	84.8	83.6	80.5	58.6	63.4	65.2
Namibia	57.3	45.4	33.6	52.5	47.8	44.6
South Africa	17.2	11.1	6.5	37.1	31.1	29.6
Tanzania	85.8	82.6	75.9	53.7	54.1	55.0
Zambia	74.7	71.8	63.3	41.2	47.6	46.5
North Africa & West Asia						
Egypt	53.8	35.0	25.1	25.9	34.9	40.3
Iran	39.0	29.4	21.6	25.2	33.9	46.4
Jordan	16.7	11.3	6.3	41.9	44.3	62.2
Morocco	53.0	37.1	25.5	29.0	38.9	47.7
Syria	33.6	28.5	20.0	31.7	50.7	60.7
Tunisia	37.0	25.4	20.5	27.1	34.4	32.8
Central Asia						
Azerbaijan		29.0	22.8		53.8	53.9
Kazakhstan		19.7	13.8		30.4	24.4
Kyrgyzstan		28.9	20.8		37.7	29.8
Tajikistan		37.4	27.4		52.2	53.0
Turkmenistan		35.4	29.7		51.6	53.0
Uzbekistan		31.2	21.4		46.2	43.5
South Asia						
India	62.8	61.4	54.4	32.4	32.8	32.4
Pakistan	58.5	45.7	39.0	12.2	18.4	29.6

Source: FAO. 2011. Table A4.

Regional averages are not given as FAO's regional country groupings differ from those of the Dryland Systems CR

Appendix Table 2: Planned DS CRP Budget for 2014

Flagship Projects	Expected progress towards CRP IDOs, and indicators of this progress	W1&2	W3
Flagship			
West Asia and North Africa (WANA)	Several based on IDO Gender-disaggregated indicators of: Resilience Index, Use of Outputs, Customized Options, Productivity Increase, Stability, Dietary Diversity, Integration, Adoption, Interventions, Area, People, NDVI Effect, Market Efficiency, Market Access, Market Equity, Access to Service Delivery Institutions, Technology Uptake through Service Providers, Policy Effect on number of households adopting practices, Documented Policy Changes, and Policy Implementation Assessment	5,935,000	2,037,000
Central Asia (CA)		1,756,622	600,000
South Asia (SA)		2,753,874	100,000
West Africa (WA)		5,880,511	-
East and Southern Africa (ESA)		3,499,870	-
Sub Total		19,825,878	2,737,000
Governance & Management		1,525,000	-
Regional Coordination		1,075,000	-
Strategic Gender		700,000	-
Grand Total		23,125,878	2,737,000

IDO	West Asia and North Africa	Central Asia	South Asia	West Africa	East and Southern Africa
1	5,877,000	-	1,530,646	2,873,500	4,353,218
2	6,899,000	389,622	1,597,201	2,491,349	2,061,002
3	1,138,000	435,000	384,108	176,895	-
4	2,214,000	2,065,000	688,428	553,000	973,803
5	758,000	1,414,000	327,240	420,000	720,016
6	851,000	-	417,160	430,000	-
7	1,035,000	-	131,560	318,000	-
Total	18,772,000	4,303,622	5,076,344	7,262,745	8,108,038

Source: DS CRP Plan of Work and Budget 2014, Narratives, 15 January 2014, page 4.

Appendix Table 3: Income distribution and Gini Index data, 1990-2005, for regions/countries with Dryland Systems CRP Action and Satellite Sites

Region/country	Quintile 1 (% of total)			Quintile 5 (% of total)			Gini Index		
	1995	2000	2005	1995	2000	2005	1995	2000	2005
West Africa									
Burkina Faso	5.3	6.3	7.0	55.9	50.9	47.1	42.9	51.0	47.0
Ghana	6.1	5.6		46.0	46.8		35.7	38.5	41.5
Mali	4.6	6.1		56.1	46.7		63.6	43.4	38.9
Niger	6.0	5.9	5.9	48.1	49.2	50.3	49.8	45.9	43.6
Nigeria	4.7	5.0	5.1	51.2	50.4	48.6	49.4	47.2	43.8
East & Southern Africa									
Botswana	3.1			65.0			52.9	52.8	51.2
Ethiopia	7.2	9.2	9.3	47.7	39.4	39.4	39.8	34.5	29.7
Kenya	5.7	5.5	4.7	48.4	50.5	53.0	48.2	47.1	48.2
Malawi	4.9	5.6	7.0	56.1	52.8	46.4	56.6	45.7	39.3
Mozambique	5.7	5.6	5.4	50.8	52.0	53.3	39.4	42.2	40.7
Namibia	1.5			78.3			67.0	65.4	67.7
South Africa	3.6	3.1		61.8	62.7		57.8	64.5	67.8
Tanzania	7.4	7.3		41.9	42.3		39.4	35.5	36.0
Zambia	3.8	4.4	3.6	55.4	53.9	55.2	52.4	50.0	50.9
North Africa & West Asia									
Egypt	9.3	9.0	9.0	40.1	42.1	41.5	36.7	36.4	33.5
Iran	5.4	5.1	6.4	49.1	49.7	45.0	43.7	43.9	41.5
Jordan	6.7	7.0	7.0	47.0	45.0	45.5	37.9	37.9	39.2
Morocco	6.5	6.4		46.3	46.8		39.9	40.3	41.0
Syria									
Tunisia	5.6	5.9		47.6	47.2		41.5	40.8	40.8
Central Asia									
Azerbaijan	6.9	7.4	13.3	42.0	44.2	30.2	40.5	33.2	18.5
Kazakhstan	7.0	8.1	8.0	41.5	39.3	40.6	32.8	33.2	34.3
Kyrgyzstan	4.4	7.8	8.3	51.6	41.6	41.8	44.1	31.2	35.8
Tajikistan		8.0	7.8		40.0	41.9	30.3	31.3	33.0
Turkmenistan	6.6	6.0		44.4	47.2		29.9	30.6	40.3
Uzbekistan	6.5	5.9	7.1	44.3	46.1	44.2	34.0	33.5	36.4
South Asia									
India	8.3	7.7	8.1	42.5	44.3	45.3	33.2	31.8	34.6
Pakistan	9.7	9.0	9.1	39.5	41.4	40.5	32.2	29.5	30.8

Source: FAO. 2011. Table A4.

Regional averages are not given as FAO's regional country groupings differ from those of the Dryland Systems CRP