

Global Rice Science Partnership (GRiSP)	Issuing Unit: GRiSP Office (at IRRI)		Document control number: 1.1;
Prepared by: GRiSP Gender team/GRiSP Office, IRRI Approved by: Bas Bouman Endorsed by: GRiSP PPMT Endorsement date: October 11, 2013	Issue date: October 11, 2013	Version 2.0	Page: 1 of 38
Title: GRiSP Gender Strategy, Mainstreaming Gender in Rice Research and Technology Development			

GRiSP Gender Strategy

Mainstreaming Gender in Rice Research and Technology Development

Version 2.0

Contents

Preface	3
1 The Global Rice Science Partnership, a synopsis	4
1.1 Program goals and objectives	4
1.2 Program impact pathway	4
1.3 Program structure	8
2 Rationale for addressing gender in GRiSP	9
2.1 Role of women in the rice value chain	9
2.2 Women's vulnerability	11
2.3 Women's role in research and extension	11
2.4 The imperative for a focus on gender	12
3 Gender-responsive goal and objectives	13
4 Gender impact pathway and theory of change	15
4.1 Overall impact pathway	15
4.2 Transformative changes	17
5 Gender in GRiSP Themes	18
5.1 Variety improvement (theme 2)	19
5.2 Crop and natural resources management (theme 3)	20
5.3 Post harvest and new value-added products (theme 4)	22
5.4 Policy and technology targeting (theme 5)	23
5.5 Supporting the growth of the global rice sect (theme 6)	25
6 Facilitating transformative change	26
6.1 Strengthening women's participation in R&D	26
6.2 Partners	27
7 Organization	28
7.1 Management system	28
7.2 Staffing	29
7.3 Monitoring and evaluation	31
7.4 Budget	32
References	35
Appendix 1. Definitions of outputs, outcomes, and impacts.	38

Preface

At the end of 2012, GRiSP initiated a process to review and revise its gender strategy. The main purpose is to strengthen its effectiveness by establishing a results-based performance system in line with the overall recommendations included in the CGIAR “Strategy and Results Framework Action Plan” which was approved by the CGIAR Fund Council October 2012. GRiSP’s revised gender strategy will be based on a solid impact pathway and theory of change on how ‘empowerment’ of women in the agricultural research for development (AR4D) arena and in the rice value chain (women farmers, post harvest operators, processors) accelerates the delivery of GRiSP’s intermediate development outcomes and thus contributes to the delivery of the CGIAR system level outcomes. The term ‘empowerment’ integrates the strengthened role of women in the design, execution, and evaluation of AR4D, as well as improved access to resources (e.g., production inputs, knowledge, pro-gender improved technologies) and control over outputs (harvested rice, processed rice, derived income) by women in the rice-value chain. The revised gender strategy will entail ‘gendered’ outputs (GRiSP’s products and services), outcomes, and indicators of progress. We recognize that enhanced empowerment of women will only take place after substantial *transformative* changes have taken place in the mind sets and behaviors of all actors in the AR4D arena and in the rice value chain, from grassroots to leadership levels, among both men and women. Hence, our gender strategy includes important components of capacity building and training.

This current draft (version 2.0) will be submitted to the CGIAR gender panel for feedback and comments and will serve as input into a GRiSP theme leader workshop at the end of February 2013. A revised version will be presented and debated at a ‘Gender in Rice’ workshop in the Philippines in mid March 2013 and reviewed by outside experts. The resulting updated version will serve as input in discussions with GRiSP’s NARES partners throughout 2013 and afterwards. Thus, GRiSP’s gender strategy will be a ‘living document’ that will be continuously improved and updated as we progress along a learning pathway towards ‘engendering’ the AR4D agenda in the rice sector.

This document starts with a brief synopsis of GRiSPs goals, objectives, and structure. It also summarizes the overall impact pathway and theory of change that anchors the gender strategy. Readers generally familiar with GRiSP can skip this chapter and proceed to the others that present the rationale, objectives, structure, and implementation plan of GRiSP’s gender strategy.

Bas Bouman
Director, GRiSP

1 The Global Rice Science Partnership, a synopsis

1.1 Program goals and objectives

In its Strategy and Results Framework, the CGIAR has adopted four system level outcomes (SLO) that serve as the focal point of all CGIAR research activities (CGIAR, 2012):

1. Reduced rural poverty (SLO 1)
2. Improved food security (SLO 2)
3. Improved nutrition and health (SLO 3)
4. Sustainably managed natural resources (SLO 4)

The CGIAR Research Program for Rice (CRP 3.3), known as the Global Rice Science Partnership (GRiSP) provides a single strategic plan and unique partnership platform for impact-oriented rice research for development (<http://www.cgiar.org/rice-grisp/>). In accordance with the above SLOs, the mission of GRiSP is to reduce poverty and hunger, improve human health and nutrition, reduce the environmental footprint, and enhance ecosystem resilience of rice production systems through high-quality international rice research, partnership, and leadership. To achieve this mission, GRiSP has the following objectives:

- *Objective 1 (food for people)*. To increase rice productivity and value for the poor in the context of a changing climate through accelerated demand-driven development of improved varieties and other technologies along the value chain (addressed through themes 1,2,3,4 and 6)
- *Objective 2 (environment for people)*. To foster more sustainable rice-based production systems that use natural resources more efficiently, are adapted to climate change and are ecologically resilient, and have reduced environmental externalities (addressed through themes 3, 4 and 6)
- *Objective 3 (policy for people)*. To improve the efficiency and equity of the rice sector through better and more accessible information, improved agricultural development and research policies, and strengthened delivery mechanisms (addressed through themes 5 and 6)

1.2 Program impact pathway

Figure 1 presents GRiSPs overall impact pathway; a detailed explanation is presented in a separate GRiSP report (*in prep*), and only a summary explanation is given here.

Rural poverty can effectively be reduced by increased agricultural growth through improved productivity and incomes. Productivity growth in the agricultural sector also contributes to growth of regional or national economies through so-called “growth linkages”, of which lowered prices of food for workers is an important factor.

An important contributor to increased productivity is increased yields: farmers produce more output at the same cost which directly improves their income. Increased rice production (through increased yields) lowers food prices, and the productivity consequences (higher yields) result in greater demand for labor and wages. Increased yields and productivity can be brought about by genetic improvement, improved natural resources management, or a combination of both. Genetic improvement for increased productivity consists of increasing the yield potential and/or increasing tolerance (or resistance) to biotic (drought, submergence, salinity) or abiotic (pests, weeds, diseases) stresses. While the genetic potential of varieties determines the maximum yield level farmers can obtain in their fields, their natural resources management (i.e., management of crop, soil, water, nutrients, pests, and diseases) determines how much of this yield potential is actually realized.

Pathways to increase farmers’ incomes include raising productivity (yield), but also reducing the costs of production, increasing the value of production, decreasing post harvest losses, and reducing expenditures on food (which increases net available income for other purposes). The cost of production can be decreased by improved management technologies that lower the use of inputs even while holding yield constant. The value of production can be increased by increasing the value of rice grains, or by increasing the value and use of byproducts such as straw and husk. The value of rice grains can be increased by enhancing physical quality (decreasing chalkiness, increasing head rice recovery) or chemical quality (eg aroma, stickiness, cooking quality) for eating. Increased grain quality can be derived from genetic improvement (eg aromatic rice, less chalky rice, rice grains with specific qualities for cosmetics) as well as from improved post harvest technologies. Finally, reduced expenditures on food can be realized through the lowering of the price of rice.

A direct pathway to increasing **food security** is by making staples more available and at lower costs through technological changes in agriculture. A low price of rice makes it more affordable to net rice consumers both in rural and urban areas. Improved rural household food security can be realized through increased on-farm production, and/or increased income (which translates into increased purchasing power). Like in reducing poverty, rice research can contribute by developing technological that that increase yield and productivity, increase the value of rice products (grains, by-products), lower the cost of production, and lower post harvest losses

Nutrition and health: human micronutrient deficiencies are relatively severe in areas where rice is the major staple. Increasing the density of provitamin A carotenoid, iron, and zinc in the grains of rice can contribute to the alleviation of these deficiencies, especially among urban and rural poor who have little access to alternatives such as enriched foods and diversified diets.

Different pathways exist by which agricultural research can increase the **sustainability** of rice production, reduce the use of precious resources (water, energy), increase ecosystem services, and reduce negative environmental externalities in rice production such as greenhouse gas emissions and loading of agrochemicals (including pesticides). Increasing the productivity of input use (e.g., water, energy, nutrients) reduces the amount of inputs used per unit production, and hence conserves these input resources. The increase in productivity can be realized through an increase in effective use, or uptake, of the input in question, and by an accompanying reduction in emission to the environment. Some technological innovations directly target the reduction of negative externalities such Integrated Pest Management (IPM) and Ecosystem Engineering that aim to reduce the application of pesticides in rice landscapes by enhancing natural (bio)control functions and ecosystem resilience. Adapted water and soil management practices can reduce the emission of greenhouse gases.

CGIAR Development Outcomes

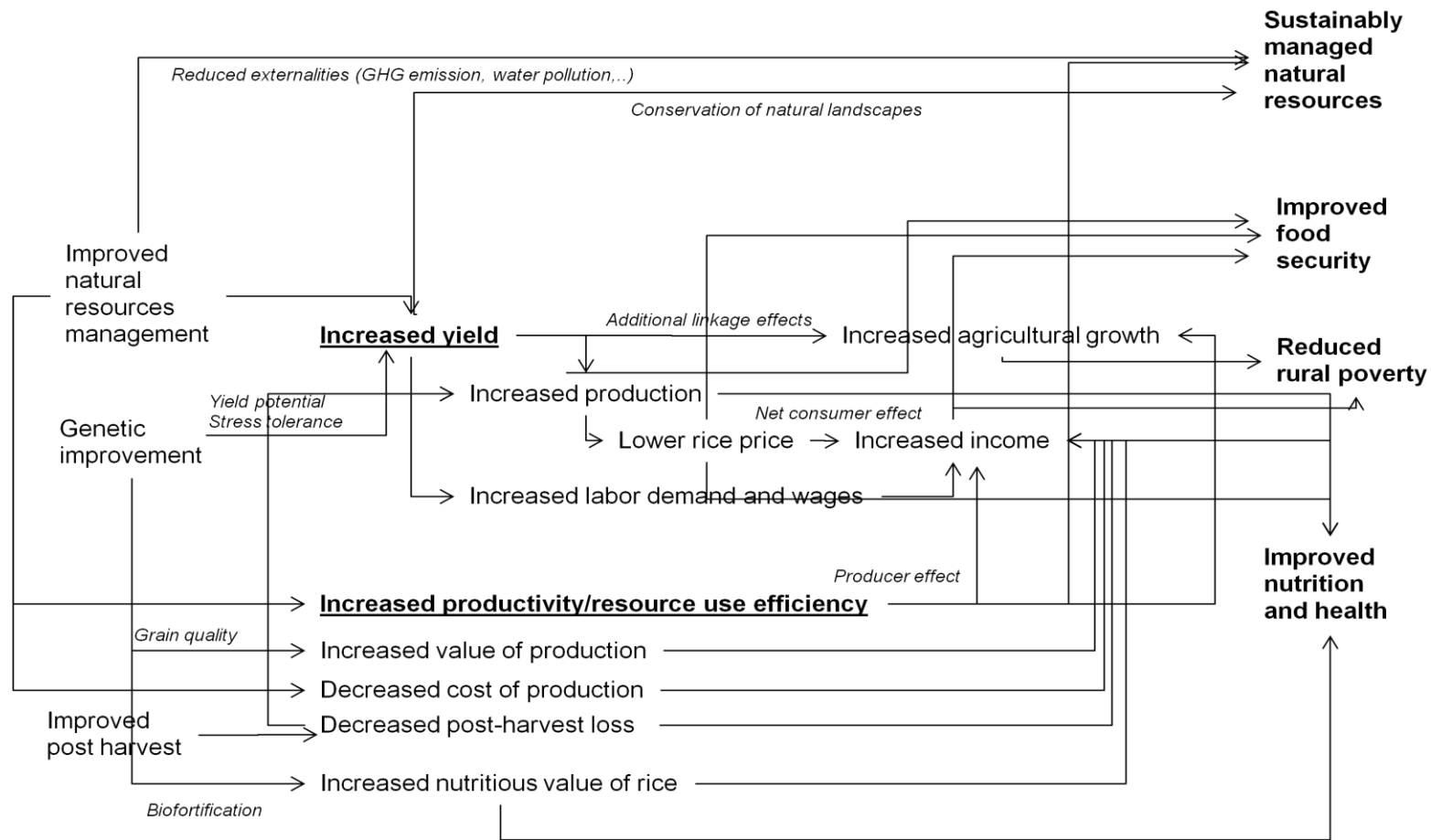


Figure 1. Schematic impact pathway underpinning GRIIP; increased yield and productivity are at the core of the change theory

1.3 Program structure

Based on the theory of change (paragraph 1.2), GRiSP contributes to the four CGIAR development outcomes through six interconnected research and development themes (Table 1) embedded in a results-chain framework: GRiSP research leads to scientific discoveries, which are used to produce products and services, which are “brought to market” by intermediate users, and finally adopted by the end users (farmers, value-chain actors) to produce intermediate development outcomes, which contribute the desired CGIAR system-level outcomes¹. Four themes (1-4) develop science-based products that will contribute to the increases in yield and productivity that were identified as key drivers for reducing poverty, increasing food security, increasing health and nutrition, and improving the sustainability of natural resources. Theme 1 develops pre-breeding products (such as the maintenance of genetic stocks and the development of new breeding populations, SNPs, QTLs, genes, and technology tools) that will be used by geneticists and breeders worldwide to increase the effectiveness of breeding new varieties. Theme 2 develops new rice varieties with improved properties (such as increased yield potential, improved quality, enhanced nutritious value, tolerance to biotic (pests, diseases, weeds) and abiotic stresses (drought, submergence, salinity, heat and cold tolerance, problem soils), and improved grain quality). Theme 3 develops natural resources management technologies that improve the efficiency of using land, labor, water, nutrients, and energy. Other products that are generated to contribute to the CGIAR development outcomes include improved post harvest operations and increased quality and value-added of rice (theme 4), and technologies to reduce cost of production and for environmental protection and reduced environmental externalities (theme 3). Themes 5 and 6 produce products and services that facilitate and accelerate the outcome process. Theme 5 provides critical feedback to all other GRiSP themes, allowing them to develop well-targeted, demand-driven products and delivery approaches toward technologies, management systems, and information that farmers and other users really need. It also develops accurate, evidence-based information on specific constraints and research needs and on the impact of research and development investments to date to policymakers, donors, research managers, and others, so as to generate political support and target continued investment in rice research. Theme 6 facilitates scaling up of GRiSP products and services and supports the growth of the global rice sector in general. It develops innovative learning and communication tools, strengthens extension capacity, and develops and implements effective systems for large-scale adoption of GRiSP’s new rice technologies globally.

¹ The definition that GRiSP uses for outputs, outcomes, and intermediate development outcomes are given in Appendix 1.

Table 1. GRiSP Themes (Global Rice Science Partnership, 2010).

- Theme 1: Harnessing genetic diversity to chart new productivity, quality, and health horizons
- Theme 2: Accelerating the development, delivery, and adoption of improved rice varieties
- Theme 3: Ecological and sustainable management of rice-based production systems
- Theme 4: Extracting more value from rice harvests through improved quality, processing, market systems and new products
- Theme 5: Technology evaluations, targeting and policy options for enhanced Impact
- Theme 6: Supporting the growth of the global rice sector

2 Rationale for addressing gender in GRiSP

2.1 Role of women in the rice value chain

Empirical studies on the different roles and responsibilities of women and men from different socioeconomic groups in rice- based agriculture in Asia, Africa, and Latin America revealed that women contribute significantly to the rice economy, both as paid and as unpaid family labor. Women's and men's roles are often conditioned by several interrelated sociocultural (including class, ethnicity, age, marital status, and religion), economic, and environmental factors. However, gender roles and responsibilities are dynamic and can change over time depending on emerging changes, e.g. climate variability and abiotic stresses, shifts from subsistence to commercialized rice production, increasing mechanization, urbanization, male labor out-migration, technological interventions, and other driving forces. For example, the increasing out-migration of men and decreasing male: female ratio in agricultural labor, tend to change the traditional division of labor in rice production, with women not only increasingly providing field labor for rice production but also taking on managerial and decision-making roles on the farm, including choosing rice varieties to be grown (Paris et al., 2010).

Gender disaggregated labor data reveal that the overall use of female labor in rice production is substantial, although the relative shares vary by country, agroecosystem, class/caste, ethnicity, and availability of male labor. In Southeast and South Asia, women contribute at least half of the total labor inputs in rice production. In eastern India and Nepal, women contribute 60-80% to total labor inputs per hectare (Paris et al., 2008; Pandey et al., 2010). Among poor small-holder farming communities, rice

production and processing depend on the availability of family labor, especially of female members. Except for land preparation, which is traditionally done by men, most of the rice operations such as pulling seedlings from nurseries, transplanting, weeding, applying of farm yard manure, manual harvesting, threshing, post harvest activities, seed selection and storage, processing rough rice, preparing rice for food and other food products, are done exclusively by women or jointly with men. In Bangladesh, where social restrictions hinder women's mobility, rice postharvest and processing activities, raising fish in ponds, homestead vegetable gardening, and livestock care are predominantly done by women (Naved et al., 2011). Yet women face several constraints in performing these roles because of their lack of access to technical knowledge and technologies which can reduce their drudgery and provide additional income. In Bihar, India, predominantly women family members manually thresh field-dried paddy using traditional methods, resulting in relatively large and preventable post harvest losses.

In Africa, women undertake much of the work in traditional rainfed, mangrove, and upland rice production systems. However, women's labor contributions in rice farming vary from region to region, and even within regions as shown for West Africa by Nyanteng (1985). Labor supplied by women for rice cultivation varies from 3% for floating rice cultivation (using animal traction) in Mali, to 80-100% in mangrove swamp rice cultivation in the Gambia and Liberia where women participate in most of the activities and perform the post harvest rice processing activities. Also, the division of labor between men and women varies with crop type. In Gambia, for example, swamp land farming is completely women's duty. Men cultivate cash crops and their fields are usually larger (FAO, 1984). In Mali, rice was traditionally grown only by women near the rivers or wetlands (Synnevag, 1997). In much of Africa, women hold the responsibility for producing subsistence food crops for household consumption on their own plot or on the communal household fields. In other parts of the world, like in rice-growing areas of Asia, men traditionally undertake activities such as land preparation, plowing, irrigation and field leveling. In Africa, however, women are often responsible for sowing, transplanting, weeding, and crop processing (FAO 1997). Duflo and Udry (2004) reported that in Côte d'Ivoire, there is an important organization of agriculture, as in other West African contexts. Such organization is characterized by the fact that much production takes place on plots that are managed by particular individuals within the household. Each individual has the right to make decisions with respect to cultivation on these plots. Husband and wife separate their farm plots and there is a certain degree of specialization by gender in the crops. Rice, for example, is a male crop in some groups, while a women's crop in some others. In some groups, there is no clear gender pattern for rice.

In Latin America, women's participation in rice production is relatively (compared with Asia and Africa) poorly documented. In part, this dearth of information is related to the lack of data about social cohesion and social stratification for agricultural societies in the region as whole and in the sub-regions in particular (Andean, Southern Cone, and Central America – Caribbean). Women play a role throughout the production and value

chain, but disaggregated data on their participation are hardly available. What little transpires suggests that women's roles and contributions as producers or transformers differ widely from that of women in other Asia and Africa. In general terms, direct planting and mechanize work characterize the many parts of the region, which does not allow for stratification of women's participation. However, rice transplanting is carried out in Peru, Colombia, Ecuador, the Dominican Republic, and some other Central American countries (e.g., Nicaragua).

2.2 Women's vulnerability

Men and women farmers who live in poverty-stricken areas are especially vulnerable to changes and shocks in their natural resources base. Over the years, farmers have been adapting to changing environmental conditions by modifying and diversifying their production systems. However, the speed with which climate is currently changing has potentially grave consequences for poor farmers. In rice-producing areas, climate change exacerbates the effects of abiotic stresses such as drought, floods, sodicity, and salinity. Some of the world's large rice baskets are located in low lying river deltas where increasing sea water levels increase the risk of flooding and salinity intrusion. These stresses threaten the viability of rice farming and their underpinning social systems, and subsequently threaten the food security at household and regional levels. Studies have demonstrated that, through socially constructed roles and responsibilities, women are especially affected by the consequences of climate variability and climate change. Views emerging from the gender and climate change debate lead to the conclusion that actions to reduce the impacts of climate change and climate variability, are more effective with an understanding of gender differentiated impacts and vulnerabilities. It has also been recognized that women are important agents of change in community natural resources management, innovation, farming, and care giving. They therefore are instrumental to adaptation to climate change as well (UNDP, 2009).

2.3 Women's role in research and extension

The prevalence of gender stereotypes and social restrictions often excludes women from rice research and extension programs. Consequently, they face constraints that limit the potential roles as leaders and as farmers in increasing rice productivity and in dissemination of technologies through their social networks. In South Asian countries, where social restrictions prevent women's participation in farmer-participatory experiments, demonstrations and field tours, the role of women in agricultural research, development, and extension needs to increase. Moreover, in the world of national and international agricultural research, women scientists continue to be underrepresented and unrecognized.

2.4 The imperative for a focus on gender

The general rationale for considering gender in agricultural research for development has been well phrased by [Meinzen-Dick et al. \(2010\)](#) as “[it].. relates to agricultural productivity, food security, nutrition, poverty reduction, and empowerment. In all of these cases, women play a critical, but often underrecognized, role and face greater constraints than men. Recognizing this sets the stage for identifying ways that the agricultural research system can redress these problems and contribute to productivity and equity.” Women farmers actively participate in the rice economy through their involvement in the production, post harvest, and processing activities. Aside from this important labor contribution, women contribute to food security (at household, regional, and (inter-)national level), household income, and family livelihood. They also play crucial roles as guardians of household food, health, and nutrition security – especially that of their children. Increasing the resources women control has been shown to improve child health and nutrition and increase allocations toward education (Quisumbing 2003). Because of women’s large role in the rice value chain, there is a need to take into account their specific needs and preferences in the development of rice technologies (e.g., varieties, natural resources management and post harvest technologies) to increase adoption rates and accelerate the achievement of development goals. Given that poor women rice farmers are often especially affected by negative changes and shocks to the natural resources base (such as induced by climate change and variability), the development of technology solutions and strategies to cope with such stresses should pay particular attention to women farmers’ needs. However, despite their active participation in the rice economy, women face discrimination in access to key productive assets, inputs and services including land, livestock, labor, education, extension, and financial services. This ‘gender gap’ in access to key assets and resources reduces women’s productivity and diminishes their contributions to the agricultural sector. It negatively affects their wellbeing and that of their families, especially in terms of their food and nutrition security, but also imposes a high cost on the economy through productivity losses (FAO 2010). Research surveyed by [FAO \(2011\)](#), confirms that *“closing the gender gap in agriculture can improve agricultural productivity, with important additional benefits through raising the incomes of female farmers, increasing the availability of food and reducing food prices, and raising women’s employment and real wages”*.

“Successful development interventions are, by nature, transformative - whether through creating opportunities, new commodities, and services or changing the way people do things and the way they perceive and react to change” ([Meinzen-Dick et al., 2010](#)). Women’s capacities to lead and play transformative roles in their respective institutions as well as train grassroots women, should be enhanced through their participation in various capacity enhancement programs. These include increased involvement of women throughout the research-extension-development chain.

3 Gender-responsive goal and objectives

To support its overall mission and objectives, the goal of GRiSP's gender strategy is to *reduce the gender gap in the rice sector*. It's specific objectives are:

1. *Gender mainstreaming*: to ensure that the development of GRiSP's products and services along the rice value chain (production, post harvest, processing) takes gender differences into account, and addresses the specific needs and preferences of women.
2. *Gender research*: to assess social and gender issues in the rice sector, and to assess gender-differentiated impacts of GRiSP's products and services on productivity, livelihoods, nutrition, health, and sustainable natural resources management.
3. *Gender capacity development*: to enhance the capacity of women to participate in the planning, execution, monitoring, and evaluation of research, extension and provision of advisory services, and development.

Gender mainstreaming will be addressed in GRiSPs R&D themes through facilitating transformative processes to ensure that GRiSPs researchers actively take into account the needs of women farmers, post harvest operators, and processors in developing their products and services, and become cognizant of gender-differentiated impacts of adoption of these products and services.

Gender research will be mainly conducted in GRiSP theme 5, though specific research questions related to the development and delivery of specific products and services will be incorporated in the relevant theme developing these products and services.

Gender capacity development will mostly be addressed through GRiSP theme 6, though training related to specific GRiSP products and services will be embedded in the themes that develop them.

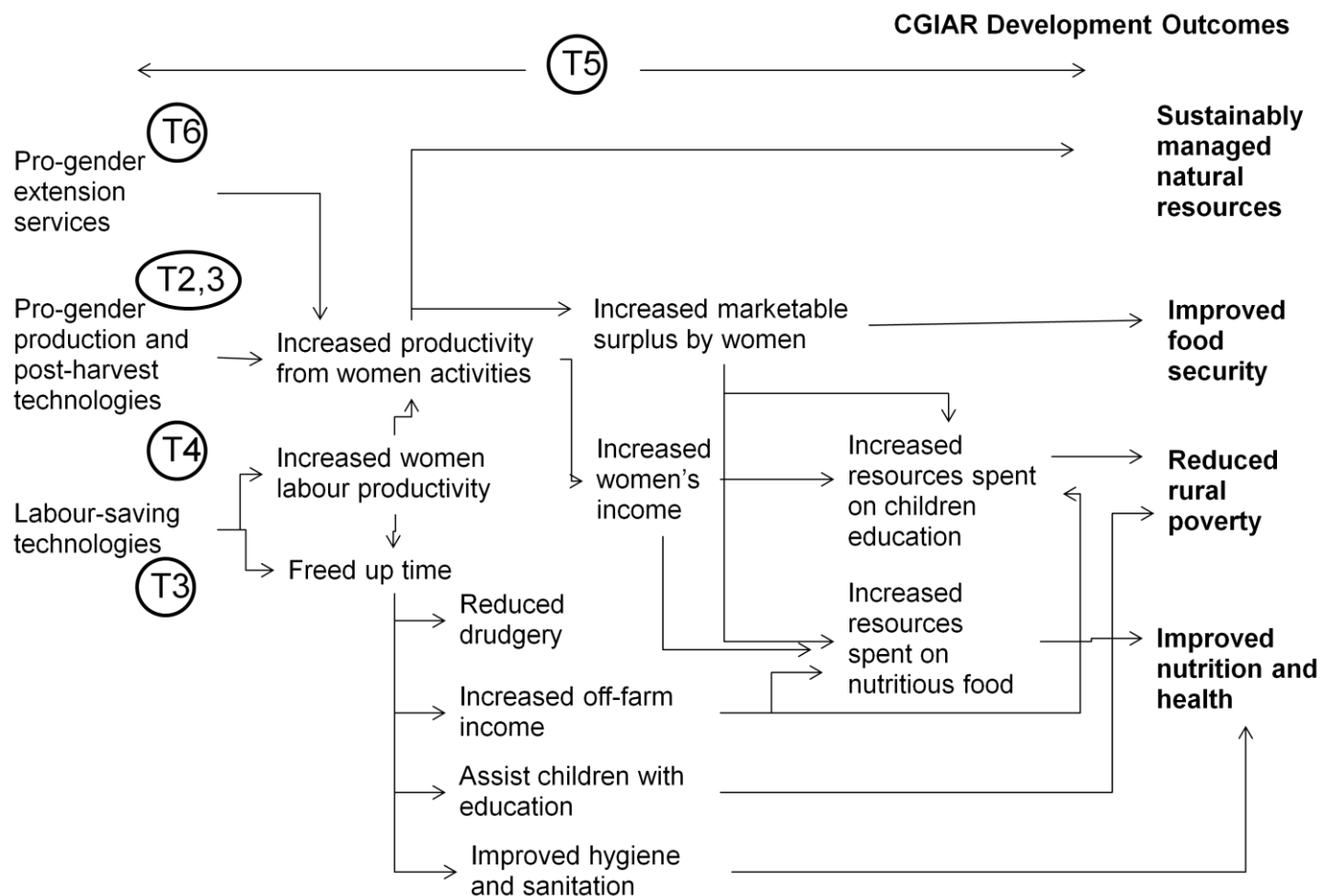


Figure 2. Schematic gender impact pathway, linking engendered products and services to gender-specific outcomes and CGIAR system level outcomes. The circles indicate the entry points for each of GRISP's themes. Themes 5 and 6 facilitate transformative changes through technology targeting and ex-ante and post-ante impact assessment and through capacity building and training, respectively.

4 Gender impact pathway and theory of change

4.1 Overall impact pathway

GRiSP's "gender impact pathways" provide the basis for understanding the role of gender in technology impacts as well as indicate areas for integrating gender considerations into the process of product development and deployment, including research planning, design, implementation, and evaluation. Here, we present the overall gender impact pathway for GRiSP, whereas specific impact pathways for each theme are described in chapter 5. [Figure 2](#) schematically summarizes the gender impact pathway that links GRiSP's 'engendered' products to gender-specific outcomes and CGIAR system-level outcomes (SLOs).

Female family members participate in rice production, post harvest, and processing operations. Through farming, they contribute to food security at household level and at regional to national to global levels, and hence benefit from the overall impact pathway for GRiSP ([Figure 1](#)). However, women's roles in the rice sector are often overlooked and undervalued, and many impediments exist that hinder women realizing their full potentials. Access to and empowerment by women over the use and marketing of the rice they (help) produce specifically contributes to improved food security of family members and specifically of children. Through their labor participation in the rice value chain, women are income generators and contribute to poverty alleviation. Increasing productivity and production leads to increased marketable surplus, thus enabling women to have a greater income share and increased purchasing power to buy quality food, ensuring their roles in guarding household food, health and nutrition security, especially of young children. Also, with increased household rice supply women do not have to purchase rice (at higher price) or queue for rice ration during long periods of low supply. Empirical studies have proven that women tend to spend their additional income on food, healthcare and children's education (an important stepping stone out of poverty), while men spend more of their income on personal items (Hopkins et.al. 1994; Haddinot and Haddad (1991). In Bangladesh, a higher share of women's assets is associated with better health outcomes for girls (Halman 2000). Research from IFPRI finds that equalizing women's status would lower child malnutrition in South Asia by 13 percent (13.4 million children) and in Sub-Saharan Africa by 3 percent (1.7 million children) (Smith et al., 2001). Thus empowerment of women over the fruits of their labor (rice, income) has a strong contribution to household food security, poverty alleviation, and health and nutrition.

Improving access to resources (inputs, technologies, technical knowledge) will increase the productivity of women's labor. As a consequence, women may increase their income (which they can spend on health and education) and/or increase their time available to invest in other income-generating activities, in helping children with their education, and in strengthening of social networks. Increased resource access can be

accomplished by developing technologies and know-how (GRiSP products and services) that are specifically targeted to their needs and by extension and advisory services that are geared toward reaching women. Labor-saving technologies and mechanization are especially relevant for women rice farmers who provide labor for back-breaking rice operations such as transplanting, weeding, harvesting, and threshing. With labor-saving technologies, women have more leisure, more time to take care of their children, teach them school lessons, prepare food, clean their house, and take care of livestock for additional income (Paris, et.al, 2012). Mothers might also have more time for collecting water and sanitation practices, which will lead to improved health. Examples of labor-saving practices are mechanical transplanters and direct seeding equipment, mechanical weeders and/or the use of herbicides, harvesting machinery (combine harvester-thresher), mechanical thresher, rice micro mill, which can reduce/eliminate women's drudgery, reduce health risks, and free their time. Studies have shown that with the adoption of the mechanical drum seeder in south Vietnam, women from farming households were relieved from transplanting work, enabling them to have more time for their personal care, leisure, socializing/networking with other women, coaching their children in their studies, and taking care of pigs for income and home consumption (Paris and Chi, 2005). Mechanical threshing at the farm level can improve efficiency in threshing, reduce losses, remove drudgery, and address health effects, mostly to women (Schmidley and Kumar, 2013). The adoption of combine harvester-threshers through custom services in eastern India, led to the decline in the demand for female family labor in harvesting and threshing. Obviously, care must be taken with the introduction of labor-saving technologies that women workers are not robbed of their means of income and that alternative use of their time really constitutes an improvement. Sometimes, improved conditions for women can be an unintended and unanticipated consequence of the development of a new technology. Preliminary studies on the impacts of adoption of submergence-tolerant rice varieties on women in eastern India reveal that, because of the ability of Swarna Sub1 to recover after 10-14 days of submergence, women do not have to do gap filling or replanting of crops that did not survive the flooding as well). Also, providing women farmers access to stress-tolerant seeds, such as the submergence-tolerant Swarna-Sub1, will increase the resilience to extreme climate variability due to reduction in crop losses.

Through their dominant role in post harvest and food processing activities, women can contribute to reduction in post harvest losses and increased quality of rice, which contributes to increased food security and health and nutrition. In many areas, women still practice the traditional methods of post harvest operations, such as manual threshing, winnowing, and poor seed management, which result in significant losses (Schmidley and Kumar 2012). Adoption of improved post harvest technologies will directly benefit women through reduced losses, thus increasing rice for food consumption and ensuring food security. Value adding technologies will provide women additional income.

A study on the impact of male outmigration on rice production and women left behind in Southeast and South Asia, reveals that women are taking over men's responsibilities in rice management, for example spraying pesticides, irrigating the

fields, other crop care management, and supervising hired laborers (Paris et al., 2010). Thus, involving women farmers, especially the *de facto* heads and *de facto* farm managers in the R&D process and training programs will lead to gender-equitable access to technologies, inputs, technical knowledge, and skills.

More examples of the impacts of GRiSP products and services on the livelihoods of women are given in the specific impact pathways for each GRiSP theme (chapter 5). In general, gender-equitable access to seeds of improved varieties, improved natural resources management practices and technical know-how, and involvement in participatory experiments and agricultural training programs, reduces the gender gap.

4.2 Transformative changes

Transformative changes need to happen to facilitate the steps in GRiSP's gender impact pathway:

- Baselines need to be established concerning women's roles, empowerment status, and socio-cultural contexts in the rice sector. Especially in Latin America, more information needs to be collected.
- GRiSP researchers and their partners (public and private sector, NARES, NGOs, etc) need to be 'sensitized' to the gender aspects of their work. They need to be aware of gender roles and cultural contexts, and need to develop research questions about women's specific preferences for the products and services they develop and the potential impact of adoption of these on women's livelihoods. They need to engage women farmers and other women actors along the rice value chain in the design, execution, and analyses of their experiments. Good examples are inclusion of women in participatory field trials, sensory panels, and variety testing. Through participation of women in variety testing, breeders will have a better understanding of women-preferred traits and selection criteria, particularly the cooking, eating and storage qualities, quality of rice straw for animal fodder, special traits for valued added-products, post harvest qualities (easy to harvest, thresh), and agronomic characteristics (height which makes the crop easy to harvest). Information about farmers' preferences and adoption of new technologies need to be gender disaggregated and analyzed.
- Access by women farmers and other women stakeholders to improved products and services (new varieties, crop management practices, post harvest technologies, inputs, knowledge, etc) needs to be enhanced through better targeted trainings and rural extension and advisory systems. More women farmers need to be included in practical and field trainings, and the number and skills of women extension agents need to be increased.
- More women need to be more actively engaged in the research for development continuum through breaking down socio-economic and cultural barriers to their participation.

GRiSP's overall impact pathway and transformative changes it will facilitate are summarized in [Figure 3](#), which gives the flow of gendered research questions, leading to gendered outputs, research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

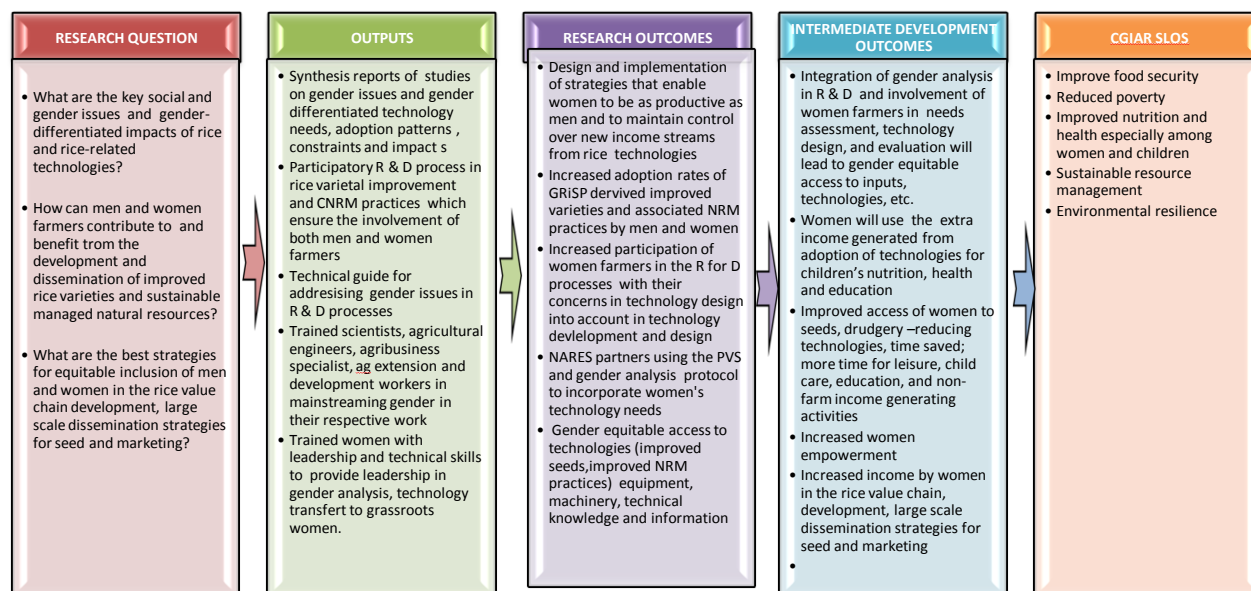


Figure 3. Schematic diagram of the overall gender theory of change and impact pathway of GRiSP, showing how gender-related research questions lead into outputs, research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

5 Gender in GRiSP Themes

Gender aspects have different weights and dimension in the different GRiSP themes. For example, theme 1 mainly deals with safeguarding and unraveling genetic diversity of rice, and most of its activities deal with genes and chromosomes in genebanks and laboratories. Hence, in this theme, there are hardly gender-specific research questions or products to be developed (though improving participation of women researchers as a transformative process is relevant). On the other hand, the more socio-economic theme 5 is heavily involved in technology targeting and ex-ante and ex-post impact assessment and hence plays a key role in GRiSP's gender strategy. Below, the main gender research and product development activities, and their contributions to transformative changes, are described through specific impact pathways for themes 2 to 6. Thematic entry

points in the gender impact pathway are depicted in [Figure 2](#) in paragraph **Error! reference source not found.** .

5.1 Variety improvement (theme 2)

Outputs. This theme produces rice varieties with improved traits such as high yield potentials, tolerance or adaptation to abiotic (drought, submergence, salinity, extreme temperatures, problem soils) and biotic (pests, weeds, diseases) stresses, and high quality (taste, aroma, cooking quality, texture, nutritious value, etc). Tools are developed to specifically include women's needs and preferences in the breeding process, such as Preference Analyses, Participatory Varietal Selection (PVS), market analyses (see theme 5, paragraph 5.4), and sensory panels. A PVS guide (Paris et al., 2012) has been developed for plant breeders, agronomists, social scientists and extension workers for proper implementation. The PVS process has a rule to include at least 50% women. A gender-sensitive monitoring and evaluation systems will be put in place, including a gender-disaggregated data collection and analysis strategy. Women participation in seed management trainings will be targeted at 50% or more. Concrete outputs of preference analyses are women's acceptance criteria for improved rice varieties, e.g. post harvest processing ease, eating qualities, cooking and keeping qualities, other traits such as straw yield for animal feed, ease of harvesting (where women do most of the harvesting), and appreciation of improved traits as listed above. Other outputs are NARES teams which involve women farmers in PVS, PVS trials conducted which involve men and women farmers, trained scientists on PVS and gender analysis, and trained women farmers on seed health and seed management of improved varieties.

Research outcomes. Plant breeders (from CG centers and NARES partners) will have a greater understanding of gender roles, gender differences in needs, preferences, and criteria of rice varieties as well as factors which constrain adoption of improved rice varieties. Specifically, breeders take into consideration women's preferences and criteria in developing and disseminating improved varieties. Through PVS (participation of men and women in selecting lines/varieties in researcher-managed trials, sensory evaluation and farmer-managed trials) the similarities and differences in varietal preference of men and women will be highlighted. PVS methods inclusive of women farmers will be institutionalized by NARES partners.

Both men and women farmers participate in PVS, particularly in sensory evaluation and farmer-managed trials, which will accelerate the adoption and dissemination of improved rice varieties. More women farmers will have access to seeds of improved rice varieties and to technical knowledge through their increased participation in PVS and seed management training activities.

Intermediate development outcomes. Through addressing women's needs and preferences, and improved targeting of variety development and dissemination,

adoption of improved rice varieties by women will be accelerated. This will lead to increased productivity, increased production, increased rice supply for home consumption and the market, increased additional income, reduced hunger, and improved nutrition of children. Because of increased productivity, poor families have longer months of rice supply. Women will spend less money by purchasing less rice, and spend more on quality and nutritious food.

Adoption of stress-tolerant varieties will lead to reduction/elimination in women's drudgery in gap filling or replanting because new rice varieties can tolerate or withstand drought and floods better. Women use freed time on child care and income generating activities. Improved access to seeds of improved varieties will increase women's empowerment over input use. Rice seed quality will increase through women trained in seed management. Adoption rates of varieties with enhanced nutrition qualities will accelerate.

Figure 4 summarizes the gendered results chain for this theme.

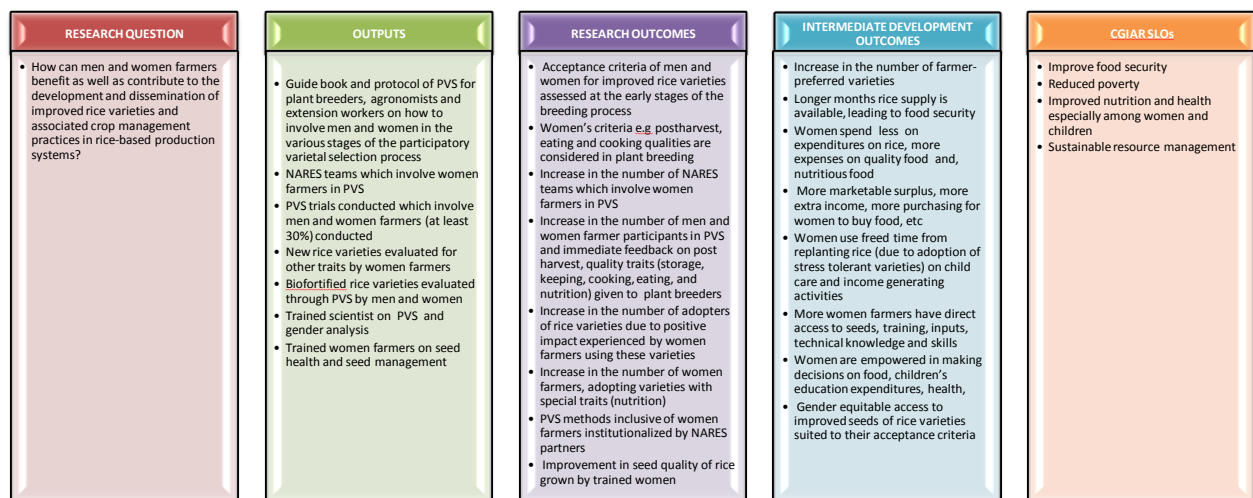


Figure 4. Schematic diagram of the gender theory of change and impact pathway of theme 2 of GRISP, showing how gender-related research questions lead into outputs, research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

5.2 Crop and natural resources management (theme 3)

Outputs. This theme will develop and deliver improved natural resources management (NRM) technologies (crop, water, nutrients; pest, disease, and weed control) to sustainably increase rice productivity and protect the environment. Through the gender strategy, the development of new NRM technologies will take into account

gender-differentiated roles and gender-differentiated constraints and opportunities for adoption of improved practices. The development of labor-saving technologies, and technologies to reduce drudgery, will be especially relevant for women farmers. This theme will also deliver scientists trained in addressing gender issues in NRM, and trained women scientists on leadership and technical skills to further train grassroots women.

Research outcomes. Scientists will take into account how to target, design, and evaluate NRM technologies that benefit women and meet their criteria. Participatory experiments will involve women farmers who grow rice and non-rice crops for both home consumption and sales.

Intermediate development outcomes. Accelerated and increased adoption of improved NRM technologies by women will lead to increased productivity, increased production, increased rice supply for home consumption and the market, increased additional income, reduced hunger, and improved nutrition of children. It will also lead to improved sustainability and environmental friendliness. Adoption of labor-saving technologies (especially for transplanting, weeding, and harvest) will free up time by women that can be used on child care and income generating activities. It will also lead to reduction/elimination in women's drudgery. Improved access to improved NRM technologies will increase women's empowerment over input use. Technologies such as IPM and ecological engineering will lead to reduction in health risks and expenditures on chemical inputs. Women's participation in participatory field experiments will lead to equitable access to improved technologies and technical knowledge, thus strengthening the resilience of women who are more vulnerable than men to extreme climate variability and environmental shocks.

Figure 5 summarizes the gendered results chain for this theme.

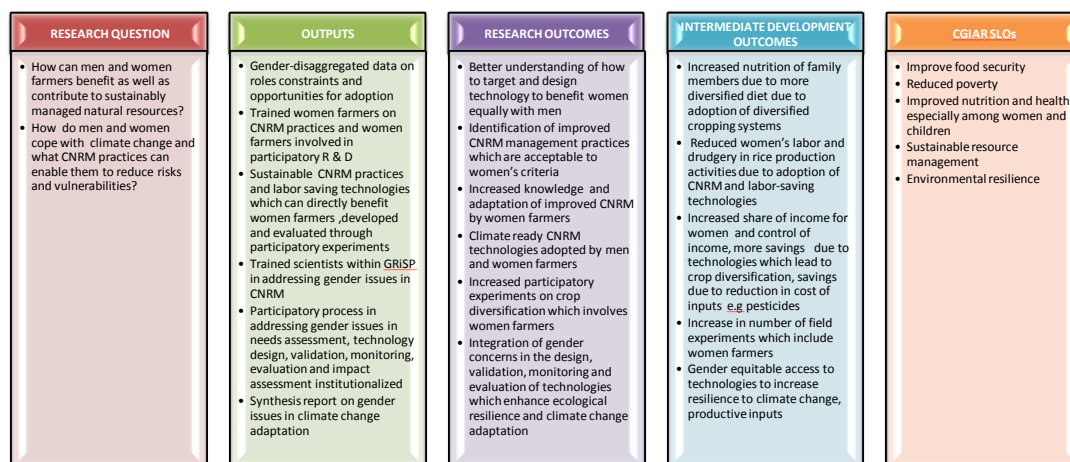


Figure 5. Schematic diagram of the gender theory of change and impact pathway of theme 3 of GRiSP, showing how gender-related research questions lead into outputs, research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

5.3 Post harvest and new value-added products (theme 4)

Outputs. This theme will develop and deliver improved post harvest technologies and novel value-added products from rice. Studies and reports will be produced that identify gender roles, constraints, and opportunities in post harvest and processing activities. Post harvest technologies which are pro-poor women (labor –saving, efficient, value adding) will be evaluated by women/women’s groups. Business models for post harvest technologies will be tested with women’s groups and piloted by women-led NGOs. Novel rice-based products which meet women’s needs (consumption, nutrition, and income) will be developed to meet market demand. Agricultural engineers and agribusiness specialists within GRiSP will be trained to address gender issues in post harvest, processing, and other value adding projects. Women and members of womens’ groups will be trained on the use of improved postharvest equipment. Training and communication materials (e.g. video training on technologies for women farmers) will be produced for large scale dissemination of technologies.

Research outcomes. The outputs will lead to improved understanding of the roles, constraints, and opportunities of men and women in harvest and post harvest activities, in processing, food storage, and seed selection/storage, and in the development of novel rice-based products. Value adding will increase income from rice farming and processing. Women will be empowered in making decisions on expenditures on food,

children's education, health, and nutrition. Strategies of developing and disseminating post harvest technologies will meet women's needs and criteria.

Intermediate development outcomes. Post harvest losses will be reduced, development of new rice products will meet women's livelihoods uses, women will be more empowered (control of income), household food security will be increased (resulting in less rice that needs to be purchased), entrepreneurial business skills of women strengthened, and family welfare improved. Widespread adoption of the products of this theme can lead to more stable rice prices, increased income for farmers, and healthier consumers, which will increase labor productivity and decrease the cost to poor families and national health budgets.

Figure 6 summarizes the gendered results chain for this theme.

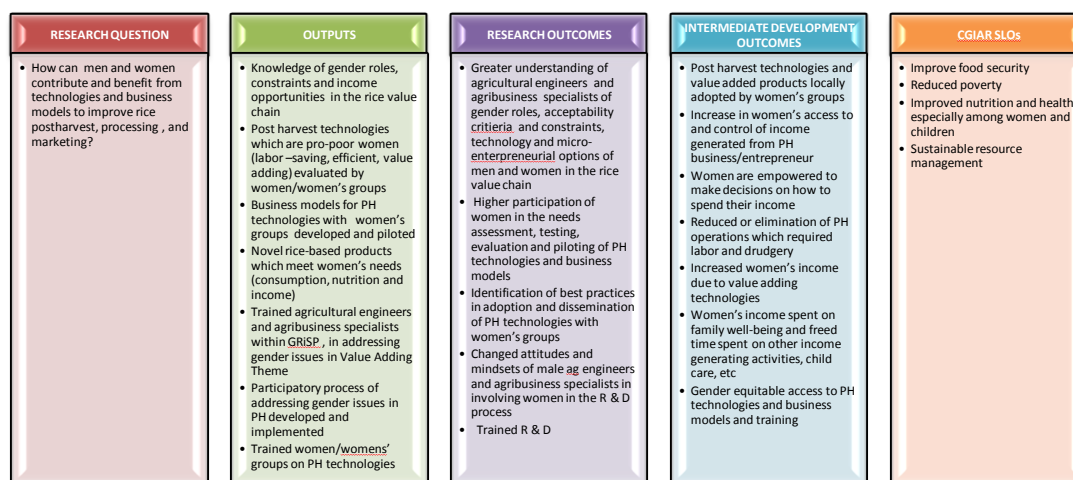


Figure 6. Schematic diagram of the gender theory of change and impact pathway of theme 4 of GRiSP, showing how gender-related research questions lead into outputs, research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

5.4 Policy and technology targeting (theme 5)

Outputs. This theme helps target the development and deployment of GRiSP products through ex-ante and ex-post impact assessments and the formulation of policies conducive to their adoption. It is a cross-cutting theme that supports the other GRiSP themes in reaching impact at scale. Gender-specific activities involve comprehensive gender analyses/assessments that look at the socio-cultural and economic context in which GRiSP operates, and that develop and apply methods of data collection and analysis regarding the various dimensions of the gender gaps. Gender-disaggregated

indicators to assess impact of R&D activities will be developed. Specific gender studies will include “Climate change and gender in stress prone rice environments in SE and SA”, “Women’s empowerment in Agriculture”, “Gender and Assets in Agriculture”, “Poverty dynamics, livelihood strategies and gender roles in rice-based farming systems”. Gender-differentiated impact assessments of rice and rice-related technologies will be produced. Gender-disaggregated analyses of consumer perceptions for targeted product development will be produced. Gender-focused policies briefs and gender disaggregated database will be available on-line.

Knowledge will be generated on gender-differentiated technology needs, constraints to adoption, access to and control of resources, use of social networks in technology dissemination, changing roles of women due to mechanization, male out-migration, and shifts from subsistence to commercial farming, gender- differentiated adaptation strategies, and effects of extreme climate variability on livelihoods and gender roles.

Research outcomes. GRiSP product developers (breeders, scientists, NARES partners) will use the “gender knowledge” listed above to more effectively develop and deploy of GRiSP products, which will accelerate and broaden adoption. Gender-responsive policies on women in rice based agriculture will be formulated.

Intermediate development outcomes. Being a “supportive theme”, this theme does not produce its own specific development outcomes but supports other GRiSP themes and GRiSP as a whole in doing so.

Figure 7 summarizes the gendered results chain for this theme.

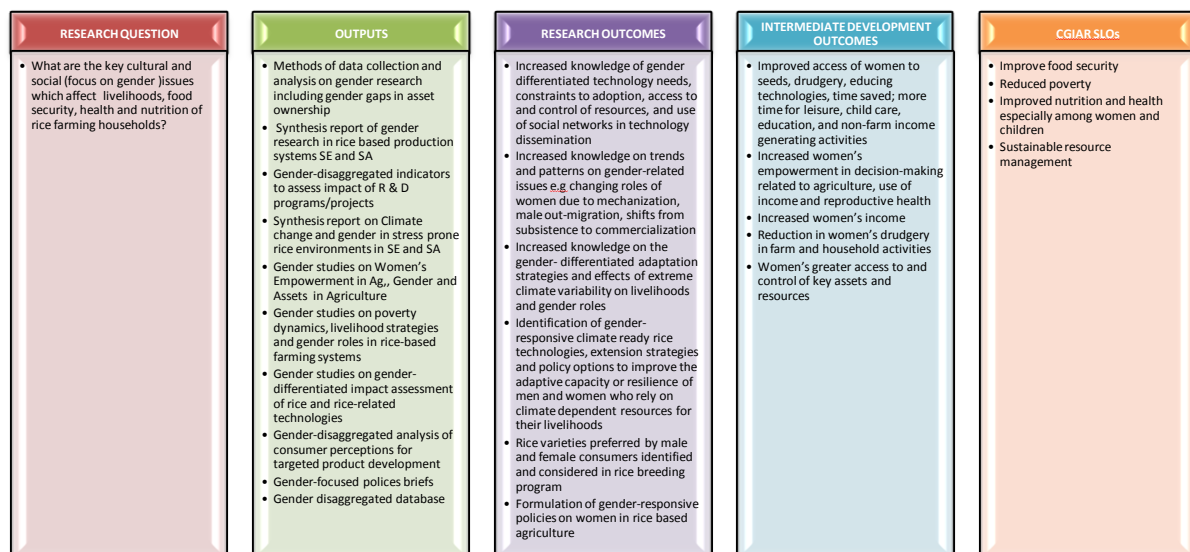


Figure 7. Schematic diagram of the gender theory of change and impact pathway of theme 5 of GRiSP, showing how gender-related research questions lead into outputs,

research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

5.5 Supporting the growth of the global rice sect (theme 6)

Outputs. This theme contributes to partnership building and capacity enhancement to scale up GRiSP's products and services in the rice sector. It is a cross-cutting theme that supports the other GRiSP themes in reaching impact at scale. Gender-specific activities are aimed at *transformative* changes in the mind sets of researchers and development practitioners with respect to gender aspects in AR4D. Capacity enhancement programs are developed and delivered such as training of scientists on how to address gender concerns in the R&D processes; training of professional women who will provide training to women farmers on all aspects of production, process and farm management; and training of grass-roots women farmers and actors in the rice value chain. Concrete outputs are training materials, people trained on gender aspects, and products and advisory delivery systems that are gender sensitive.

Research outcomes. GRiSP product developers (breeders, scientists, NARES partners) will use gendered approaches for equitable inclusion of men and women in the rice value chain development, large-scale dissemination of GRiSP products and services, and marketing or piloting new business models for improved post harvest technologies. Innovative communication strategies will support the dissemination of GRiSP products and services to a wider women audience.

Intermediate development outcomes. Being a “supportive theme”, this theme does not produce its own specific development outcomes but supports other GRiSP themes and GRiSP as a whole in doing so.

Figure 8 summarizes the gendered results chain for this theme.

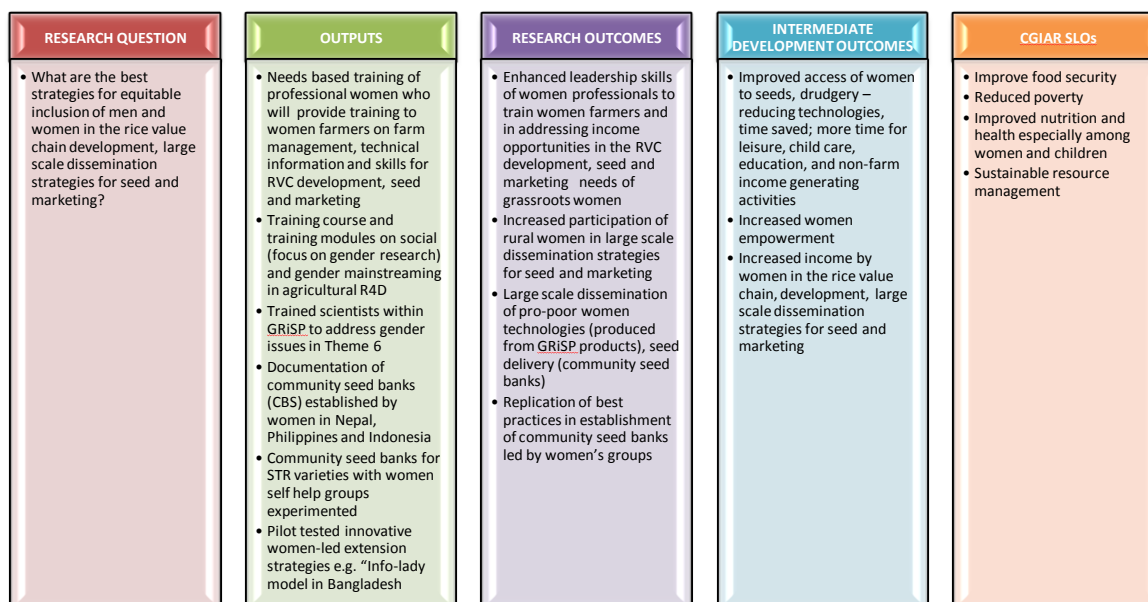


Figure 8. Schematic diagram of the gender theory of change and impact pathway of theme 6 of GRiSP, showing how gender-related research questions lead into outputs, research outcomes, intermediate development outcomes (IDOs), and ultimately to the CGIAR system level outcomes (SLOs).

6 Facilitating transformative change

6.1 Strengthening women's participation in R&D

The lack of gender balance in many of GRiSP's partners, such as the National Agriculture Research and Extensions Systems (NARES), negatively affects the likelihood that the specific needs of rural women will be met, particularly in countries where social restrictions limit women farmers' access to technologies, training activities, and extension services. In most of the international and national forums in agriculture, women research managers, agricultural scientists and agricultural extension workers are underrepresented. Although there has been increased awareness and appreciation of the roles of women as producers and income earners, very few researchers (both men and women) who work closely with farmers know how to identify gender issues that will likely have an impact on the ability of men and women to achieve equal outcomes as a result of development interventions. This is also true for GRiSP's lead and coordinating partners, where capacity for addressing gender issues are not yet fully mainstreamed in all R&D activities.

Therefore, there is a need to improve the capacity to address gender issues in research for development in GRiSP's lead and coordinating institutes, and to build or

strengthen research and leadership capacities of women scientists in partner institutions as well as increase their representation in agricultural research for development and extension. Several levels of capacity building activities will be organized by GRiSP:

- Capacity building for GRiSP theme leaders, product leaders, project leaders, and scientists to identify and address gender issues, as well as to develop road maps for achieving gender equity in access to improved technologies and technical knowledge.
- Women leadership course for Asian and African women in research, development and extension, to be conducted every year (25 participants), and followed up with the formation of a network for women leaders that will support the capacity building of grass-roots extension staff.
- Special courses, such as socioeconomic methods for strategic research on gender issues, impact assessment, and gender-sensitive monitoring and evaluation.
- Mainstreaming gender in 'regular courses'. GRiSP organizes many training courses and workshops on a variety of topics, such as breeding techniques, water management, nutrient management, hybrid seed production, etc. GRiSP will actively encourage and support the participation of women in all training courses.
- Graduate and post-graduate training. GRiSP offers scholarships for degree training, either through specific grant projects, or through its core program Global Rice Science Scholarships (GRiSS). Active women participation and gender diversity is promoted in all these programs

GRiSPs lead institute IRRI is promoting a gender-friendly work environment in its own organization and has developed a new gender strategy "Gender in the IRRI workplace: working towards removing gender biases in the workplace". This strategy aims to increase the share of women employed in the IRRI workplace across its organizational units, both at its headquarters in los Baños and at its in-country offices, and specifically to increase the share of women holding senior science positions.

6.2 Partners

To achieve its outcomes and objectives, partnerships are a crucial aspect of GRiSP. The leadership and coordination of GRiSP is provided by six major R&D organizations with an international mandate and with a large portfolio on rice: three members of the CGIAR Consortium - International Rice Research Institute (IRRI; the lead institute), Africa Rice Center (Africa Rice), International Center for Tropical Agriculture (CIAT), and three other leading international agricultural agencies: Centre de Cooperation Internationale en Recherche Agronomique pour le Développement (Cirad), L'Institut de Recherche pour le Développement (IRD), and the Japan International Research Center for Agricultural Sciences (JIRCAS). These six institutions are the founding and coordination partners of GRiSP. Together, they align and bring to the table consortia, networks, platforms,

programs, and collaborative projects with over 900 partners from the governmental, nongovernmental, public, private, and civil society sectors (GRiSP partnership report, 2013). All partners, in some way, contribute to GRiSP's goals, objectives, product developments, and impact pathways, be it at local, national, international, or global level.

IRRI and CIAT will tap this extensive partnership network to implement its gender strategy and involve partners according to theme and geographic location. AfricaRice has created the "AfricaRice-NARS gender in rice research for development task force" to facilitate the integration of gender perspective in all rice research activities. The mission of this task force is to support the effort of AfricaRice and its partners in the integration of gender aspects in rice research. A workshop was organized by AfricaRice and IRRI in August, 2011, to discuss the strategic directions of the task force and to review the different ways of mainstreaming gender in rice research. The task force includes gender focal points of 14 national agricultural research institutions of West, Central, and Eastern African (Benin, Burkina Faso, Cameroon, the Central African Republic, Cote D Ivoire, the Gambia, Ghana, Guinea, Mali, Niger, Nigeria, Uganda, Senegal and Chad) and the gender specialists from AfricaRice, CIAT, and IRRI.

7 Organization

7.1 Management system

GRiSP is managed and coordinated by its Program Planning and Management Team ((PPMT). Each coordinating partner has one representative at the level of Deputy Director General for Research or at the level of Director or Research Program Leadership, while the PPMT is chaired by the GRiSP Director. In terms of gender aspects, the role of the PPMT is to support, advocate, and negotiate funding for gender-related R&D in GRiSP; to promote and facilitate strategic collaboration and networking with researchers from other CGIAR centers, NARES, and other institutions on thematic gender issues; to provide funding support for implementation of GRiSP's gender strategy; and to facilitate the functioning of the Gender and Agriculture Research Network, a central CGIAR-wide mechanism for providing support for gender-related research.

In 2011, IRRI, AfricaRice, and CIAT appointed gender focal points to lead and coordinate the implementation of GRiSP's gender strategy and to liaise with senior management. Together, these focal points constitute GRiSP's "Gender in Rice Research Team" that is responsible for overall design, implementation, and evaluation of GRiSP's gender strategy. Dr. Thelma Paris, Senior Scientist (Socioeconomist-Gender Specialist) is assigned as coordinator of this team. She is supported by dr. Kamala Gurung (post-doctoral fellow, Gender Specialist) to implement the Gender Strategy in Bangladesh, India and Nepal. Dr. Aviafi Rita Agboh Noameshie of AfricaRice coordinates the gender

activities at AfricaRice. Dr. Jennifer Tym, Post Doctoral Fellow and Gender Specialist, coordinates the gender activities at CIAT. Each gender focal point person engages with GRiSP theme leaders or institutional focal point persons to mainstream gender in their thematic work plans (chapter 5). The specific roles of the gender focal persons are to:

- Conduct strategic research on gender in the rice sector.
- Guide scientists in incorporating the gender dimension in their research.
- Provide expertise in ensuring that studies are appropriately designed with a gender perspective.
- Disseminate findings, strengthen networking/collaboration with gender researchers in partner organizations within the sector.
- Identify tools, methods and resources for capacity development.
- Participate in the 'Gender and Agriculture Research Network'.

GRiSP's gender specialists collaborate with gender specialists of other consortium research programs (CRPs). For example, IRRI gender specialists collaborate with CIMMYT and World Fish in the Cereal Systems Initiative in South Asia (CSISA) Expansion project in Bangladesh, and with CIMMYT and ILRI in CSISA Phase 2 in India, Nepal and Bangladesh. They also collaborate with ICRISAT in the project 'Tracking Changes in Rural Poverty in Households Village Dynamics Study (VDSA) in Bangladesh. IRRI and AfricaRice collaborate in the study on 'Stress Tolerant Rice for South Asia and Africa (STRASA). IRRI collaborates with IFPRI and ILRI on the project "Gender, Agriculture and Assets Project (GAAP) which is linked with the CSISA project. These projects collaborate with CSOs and NGOs working with women's groups. GRiSP gender specialists collaborate with CCAFS (CRP 7) on assessing and mitigating negative effects of climate change on women farmers.

7.2 Staffing

[Table 2](#) provides the 'core' gender staffing at the three CGIAR centers involved in GRiSP (AfricaRice, CIAT, and IRRI). Dr. Thelma Paris provides overall leadership on gender research and mainstreaming at IRRI, and conducts women leadership courses. IRRI's dr. Kamala Gurung, is based in Dhaka, Bangladesh, and conducts strategic research on gender issues and mainstreams gender, in South Asia. IRRI's Dr. Digna Manzanilla, is responsible for gender mainstreaming activities in the Consortium for Unfavorable Rice Consortium (CURE), particularly the establishment of community seed banks managed by women in Nepal, Indonesia, and the Philippines. This IRRI team will strengthen women scientists' technical, leadership, and management skills; train scientists in identifying gender issues relevant to rice research/development and in gender research tools/methods for analysis; develop/adapt gender training materials and checklists for rice researchers; organize seminars/workshops/case studies to show the value of findings/recommendations of good gender research in rice R&D, including preparing/disseminating short briefs on key findings/recommendations from gender research in rice R&D; draw on and contribute to the central mechanism for support for

gender research; undertake capacity building of women farmers to engage in participatory rice R & D and leadership skills in community and farmers' organizations, cooperators and organize farmer to farmer exchange visits for women (and men).

Besides dr. Aviafi Rita Agboh Noameshie, AfricaRice has also appointed a socio-agronomist with gender training to coordinate the gender mainstreaming and gender research of the center since 2011. A "Gender in rice research and development task force" was established in August 2011 with gender focal persons in AfricaRice member countries. The main objective of the task force is to enhance capacity of African national scientists in gender mainstreaming and gender research.

Beside these 'core' gender staff, many GRiSP scientists contribute to gender research and development activities through their involvement in GRiSP themes (chapter 5). Because their gender work is mainstreamed, their time contributions to gender aspects are not explicit.

Table 2. Core gender staffing at IRRI, AfricaRice, and CIAT, as of January 2013.

Name and position type	Contribution (%)	Qualification	Discipline or Field
IRRI			
Thelma Paris (Senior Scientist II- Socioeconomist/Gender Specialist) –	100	PhD	Social Scientist with gender analysis experience
Kamala Gurung, PDF (Gender Specialist)	100	PhD	Social Scientist trained in GA (based in Dhaka Bangladesh and also going to work in India)
Digna Manzanilla (Scientist and Associate CURE Coordinator)	20	PhD	Agricultural Economics
To be recruited gender expert (postdoc)	100	PhD	Agricultural Economics (to be based in India under the CSISA project)
6 Research assistants (levels 4-7)	600	B.S., M.A.	Social Sciences
AfricaRice			
Aviafi Rita Agboh Noameshie (Social scientist, gender expert)	100	PhD	Social Scientist with gender analysis experience
Maimouna Ndour, Research assistant based in Saint Louis, Senegal	50	MSc	Sociologist
Leah Esther Achandi; Research assistant based in Dar Es Salam , Tanzania	20	MSc	Agricultural-Economist
To be recruited June 1	50	PhD	Social Scientist with

2013: 1 research Scientist (postdoc) for collective action and governance will be based Senegal			gender analysis experience
To be recruited June 1 2013: 1 research Scientist (postdoc) for collective action and governance will be based Tanzania	50	PhD	Social Scientist with gender analysis experience
Research Assistant To be recruited and based in Cotonou; June 1 2013	100	MSc	Sociologist
1 Post- master fellow every 2 years (to be recruited April 1 2013)	100	MSC	Socio-economist 1 sociologist
CIAT			
Carolina	10	PhD	Cropping systems Agronomist trained on gender analysis
Dr. Jennifer Tym, Post Doctoral Fellow (Gender Specialist)	100	PhD	Sociologist

7.3 Monitoring and evaluation

At the end of 2012, the CGIAR approved the “Strategy and Results Framework Action Plan” that spells out the roadmap for applying the principle of outcome-based management to CRPs. GRiSP initiated a process to review its impact pathway and define a set of targeted research outcomes and intermediate development outcomes (IDOs). This process will result in a first draft set of outcomes and IDOs by March 2013, which will subsequently be discussed (and amended/refined) with its partners (NARES, NOGs, private sector). The development of a results-based monitoring framework and management system related to GRiSP’s gender objectives is integral part of this process.

The specific objectives of gender-responsive M&E are to:

- Address gender and equity issues in the rice research innovation, development and extension programs of GRiSP.
- Promote equal opportunity for men and women from different socio-economic groups as participants and beneficiaries of a given project/program (through facilitating transformative processes).
- Develop gender-specific and equity indicators to measure the benefits to women and men for effectiveness of activities in targeted programs and projects.

There are four major gender and equity indicators which can be included in the overall M&E strategy. These four indicators are:

- The extent to which women and men are involved in the crop/sector in terms of production, postharvest, processing and marketing has not decreased (or has increased) as a result of the program
- Reduction of gender disparities in access to productive resources and control of incomes as a result of the program
- Reduction in women's drudgery in performing crop and livestock activities.
- Knowledge generation and sharing of data/information related to gender (sex disaggregated of data) issues in agriculture and food security.

In collaboration with GRiSP management and GRiSP theme leaders, the Gender in Rice Research Team will define the Gender and Equity M&E framework, further elaborate and refine the above indicators, set targets, and establish the modalities for collecting and analyzing the necessary information. To date, initial gender-specific outputs and outcomes have been designed for GRiSP's overall gender work ([Figure 3](#) in paragraph 4.2) and for each of GRiSP research and development themes ([Figure 4-8](#) in chapter 5). These outcomes and their indicators will be discussed and refined during 2013, and measurable indicators of progress developed.

At the level of GRiSP products (outputs generated by the themes), specific measureable milestones with clearly assigned roles and responsibilities of lead and partner institutions, form the basis for all monitoring and reporting. Gendered milestones will be developed, based on disaggregation of data wherever possible and meaningful. For example, the share of women participating in training and capacity building events is one measure of progress in transformative changes. Reporting on progress at the product level will be aggregated up to product lines and GRiSP themes. This will allow for a transparent monitoring mechanism, and investors in gender in rice research will be able to see clearly how their funds contribute to specific product lines or products, and through the milestones and outcomes in those, to the actual progress made.

7.4 Budget

At the moment, it is difficult to assess what level of investment in gender-related aspects of GRiSP's R&D agenda is the right one. All products that GRiSP aims to deliver will be adopted by men and women, hence one could argue that around 50% of IRRI's R&D budget should relate to the development of products that will be adopted by women. This, however, is a simplistic reasoning and we aim to establish a foundation for better-reasoned investment scenarios during the process of developing outcome targets and indicators in the course of 2013 (paragraph 7.3). Below follows our best-bet budget estimate for 2013.

Since gender is largely embedded in GRiSP's R&D themes, it is difficult to disaggregate a specific gender budget. For example, all farm household surveys and other interview instruments are gender disaggregated and analyzed, and it is not possible to identify how much of the costs of surveys and analyses are attributable to the gender strategy. Similarly, participatory R&D (such as on-farm testing and evaluation of improved technologies, participatory variety evaluation, testing and evaluation of improved rice processing technologies, etc) involves women in its planning, execution, and results analysis, and again, it is impossible to attribute such costs to the gender strategy. Gender disaggregated information exists on trainings and capacity building events organized by GRiSP, but no mechanism exists that can pull out all associated costs and attribute proportions to the gender strategy. Staffing costs of GRiSP's core gender team (paragraph 7.2) can be computed, but more staff actually address gender in their R&D activities (eg breeders, agronomists, etc in participatory R&D activities and GRiSP product development). Hence, our (conservative) best estimate of GRiSP's total investment in gender-related R&D and capacity building activities is currently (2013) a 10-15% of its total budget (minus 2% CGIAR system costs and program coordination costs), [Table 3](#). One should note that the actual budget depends on donor funding. For example, for GRiSP in 2013, the proposed guaranteed CGIAR window 1 and 2 funding is only 90% of the budget of 2012. This decline in funding will negatively affect all GRiSP activities, including its gender work.

Table 3. Approved and actual GRiSP R&D budget, and proportional investments in gender-related activities; in million \$US.

	2011	2012	2013	2014	2015
Approved	90.120	97.870	106.720	116.210	126.390
Actual	89.772	89.772	89.772		
Gender budget					
10% of approved budget	9.012	9.787	10.672	11.621	12.639
15% of approved budget	13.518	14.681	16.008	17.432	18.959
10% of actual budget	8.977	8.977	8.977		
15% of actual budget	13.466	13.466	13.466		

The personnel investment in the core gender staffing of GRiSP ([Table 2](#)) is about 0.73 million \$US (only direct staff costs).

In addition to the embedded (mainstreamed) budget for gender, GRiSP has set aside an annual budget of 300,000 \$US to strengthen its gender strategy, mainly through supporting the transformative processes (chapter 6; training, capacity building, networking, and supporting the CGIAR Gender and Agriculture Research Network) and some core gender-research activities. GRiSP management seeks to raise additional support to enhance its gender strategy. We propose to invest an additional 500,000 \$US/year to enhance gender-related research and support the *transformative* processes. This additional amount would be contingent on increased donor support, for example

through the proposed CGIAR gender performance scheme. We would especially increase capacity of GRiSP scientists and their NARES partners to take gender issues as outlined in this gender strategy into account in the development and deployment of new products and services across the rice value chain.

References

- Doss, Cheryl (2001) 'Men's crops? women's crops? the gender pattern of cropping in Ghana'; American Agricultural Economics Association (New Name 2008: Agricultural and Applied Economics Association) 2001 Annual meeting, August 5-8, Chicago, IL >
- Duflo, E. and C. Idry 2004: Intrahousehold Resource Allocation in Côte d'Ivoire: Social Norms, Separate Accounts and Consumption Choices. December 21, 2004
- FAO, 1997. "Gender: Key to Sustainability and Food Security. Illustrated Plan of Action for Women in Development", Rome.
- FAO, 2011: State of Food and Agriculture, Women & Agriculture -Closing the Gender Gap for Development, 2011
- GRiSP, Global Rice Science Partnership, 2010. Available at website grisp.net.
- GRiSP Partnership Arrangement Report, 2013. IRRI, Los Baños, Philippines (*in press*)
- Gurung, Kamala 2012. Mainstreaming gender in CSISA-Bangladesh. IRRI-Dhaka office, Dhaka, Bangladesh.
- IRRI, 2012. Cereal Systems Initiative for South Asia (CSISA) phase 2
- Manzanilla D and Paris, T. Guidelines for mainstreaming gender in research and development activities in unfavorable rice environments in South and Southeast Asia. Prepared for the Consortium for Unfavorable Rice Environments (CURE) project implemented by IRRI and funded by IFAD, Rome, Italy.
- Meinzen-Dick-Ruth, Quisumbing, Agnes R.; Behrman, Julia; Biermayr Jenzano, Patricia; Wilde, Vicki; Noordeloos, Marco; Ragasa, Catherine; Beintema, Nienke M.(2011). *Engendering agricultural research and extension*. International Food Policy Research Institute (IFPRI), Washington, DC, USA. 137 p. (IFPRI Research Monograph)
- Naved R.T., Khan N.N., Rahman H. and Ali K.L. (2011). A rapid assessment of gender in agriculture of Bangladesh. Report submitted to CIMMYT, IRRI and WorldFish by ICDDR,B, September 2011. .
- Nyanteng V.K. 1985. 'Women in Agriculture in Sub-Saharan Africa: Implications for Agricultural Research and Technology'. In "Women and Agricultural Technology:

Relevance for Research"; Vol 2 - Experiences in International and National Research. Report of a Seminar, p. 153-163. New York, USA, The Rockefeller Foundation.

Quisumbing, Agnes, (ed) 2003. Household decisions, gender and development.: A synthesis of recent research. Washington, D.C: International Food Policy Research Institute.

Pandey S., Paris T., Bhandari H., (2010) Household income dynamics and changes in gender roles in rice farming. In Pandey, s., Byerlee D.B., Dawe D., Dobermann A., Mohanty S., Rozelle S., and Hardy B. editors. 2010. Rice in the global economy: strategic research and policy issues for food security. Los Banos (Philippines): International Rice Research Institute. 477 p.

Paris, T, Singh A, Luis J, Hossain M. 2005. Impact of male out-migration on rice household economy and gender roles : a case in eastern Uttar Pradesh, India. *Econ. Politi. Weekly* 40(25): 2522-2529.

Paris TR, Cueno AD, Singh A 2008. Characterizing and understanding the socio-economic conditions of farming households in rainfed rice environments: a case in eastern Uttar Pradesh. In: Improving productivity and livelihood for fragile environments. *IRRI Technical Bulletin No. 13*. Los Banos (Philippines): International Rice Research Institute. 9 36-54.

Paris T, Singh A, Singh VN, and Ram PC. 2006. Mainstreaming social and gender concerns in participatory rice varietal improvement for rainfed environments in Eastern India. Paper presented at the International Symposium on Participatory Breeding and Knowledge Management for Strengthening Rural Livelihoods. 17-19 July 2006. M.S. Swaminathan Research Foundation. Taramani Institutional Area, Third Cross Street, Chennai 60013, India.

Paris TR, Manzanilla D, Tatlonghari G, Labios R, Cueno A, Villanueva D. 2011. *Guide to participatory varietal selection for submergence-tolerant rice*. Los Banos, Philippines. International Rice Research Institute (IRRI). 111 p

Paris TR, Singh A, Cueno A and Singh VN 2008. Assessing the impact of participatory research in rice breeding on women farmers: a case study in eastern Uttar Pradesh, India. *Expl. Agric* (2008), volume 44, pp. 97-112. Cambridge University Press

Paris, TR. 2012. Gender Strategy Plan for the 'Cereal Systems Initiative for South Asia' – Phase 2. IRRI, Los Banos, Philippines.

Synnevag G. 1997. Gender differentiated management of local crop genetic resources in Bafoulabe Cercle, Kayes Region of Mali - A case study. In "Actes du Colloque, Gestion des Ressources Génétiques de Plantes en Afrique des Savanes". Bamako - Mali, 24.-

28.2.1997. p. 85-92, Montpellier, France, Institut d'Economie Rurale, Bureau des Ressources Génétiques, Solidarités Agricoles et Alimentaires.

Appendix 1. Definitions of outputs, outcomes, and impacts.

The following definitions used by GRiSP are derived from the following ISPC and CGIAR-Consortium Office documents: *“Strengthening Strategy and Results Framework through Prioritization CGIAR Consortium Level Monitoring Principles”* and *“Strengthening Strategy and Results Framework through Prioritization”*

Output: science-based, tangible and concrete products and services, e.g., new varieties, genes discovered, improved natural resources management technologies, people trained, information data base, improved policies, etc. They are the most immediate effects of the activities undertaken in GRiSP.

Outcome: the change in behavior, or change in status of variable (e.g., increased rice yield, farm income) as a result of adoption and use of a product or service developed and disseminated by GRiSP. Outcomes are the wider changes in the social, economic and bio-physical environment in a target area and/or in the behaviour of a target population that are attributable to the CRP’s implementation. Following the ISPC, we distinguish between “Research outcomes, by intermediate users and by end users” and “Intermediate Development Outcomes”:

- **Research outcomes - intermediate users:** represent adoption and further use of research outputs by immediate users targeted by GRiSP, such as NARS researchers, private sector companies, and policy makers. They are generated as a result of research, capacity building and advocacy activities by GRiSP.
- **Research outcomes - End users:** represent adoption and further use of research outputs by end users targeted by GRiSP, such as farmers and value-chain actors (e.g., millers, traders). They are generated as a result of research, capacity building and advocacy activities by GRiSP.
- **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 GRiSP. The intermediate development objectives are attributable to GRiSP activities and are necessary precursors and logically linked to the four CGIAR development outcomes. IDOs are relevant to GRiSP-specific thrusts and scale, which correspond to GRiSP target domains and estimated volume of benefits. IDOs are the result of multiple activities by diverse actors outside GRiSP and the CGIAR and are documented through GRiSP outcome and impact studies.

Impacts: the ultimate positive/negative, direct and indirect consequences of GRiSP on the status and state of development variables. For example: decreases in rural poverty rates at transnational level, increased household food security levels, including increased nutritional quality of diets of the poor, increased resilience of the most vulnerable agricultural systems to climate change and other external shocks. The contributions of GRiSP to the four CGIAR outcomes are considered GRiSP’s impacts.