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GENDER MAINSTREAMING IN WATER MANAGEMENT: A KEY TO FOOD SECURITY AND POVERTY ALLEVIATION

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INTRODUCTION

Many lessons have been learned from numerous case studies and many interventions. Almost all of the cases confirm that women are often more committed to local development than men, particularly, concerning matters that have a direct impact on house-holds and homesteads.

Women are also well able to handle water related matters including technical issues, operation and maintenance, collecting contributions and conflicts resolution. The experiences is evidently supporting that placing women at the centre of the planning and management of water investments is both effective in producing good investments and significant in creating a wider process of empowerment, confidence building and organizations amongst women that can lead to major changes to their standing in the local society.

This can give clear-cut answer to the title of this paper which is stressing the important role and the urgent need to integrate gender mainstreaming in water resources management to achieve food security and poverty alleviation.

It is now increasingly recognised that taking a gender perspective helps to illuminate the nature of rural poverty and to design successful policies and programmes for men and women both to eradicate rural poverty, increase food production by small holders to cope against hunger and malnutrition.

The gender dimensions of poverty are readily seen in the unequal burden born by women in managing consumption under conditions of scarcity. Gender specific data though hard to collect and uneven indicates that more women than men are poor. Male mortality, migration, family dissolution abandonment and single parenthood result in households headed by women, many of these among the poorest households and thereby poverty is biased towards women.

Consequently, the burden of hunger falls disproportional on women and children: over 40 percent of women in developing world are underweight and/or anaemic; growth failure affects one third of children.

Gender analysis contends that the dimensions in water resources management are the primary and essential key element towards water security to achieve food security and the perpetuation of poverty.

In this paper emphasis will be given to the important role women could have in increasing food production towards food security, hunger alleviation and malnutrition with major stress on the existing barriers constraining the women from being the real effective actors in fulfilling the food gap to attain food security: the pre-condition for human security.

MAINSTREAMING GENDER DIMENSIONS INTO WATER RESOURCES DEVELOPMENT AND MANAGEMENT IN THE MEDITERRANEAN REGION” (GEWAMED) AND FOOD SECURITY: MAJOR TASKS

It is now widely accepted that the economic, social and political advancement of women is critical to breaking the vicious circle of poverty, malnutrition and hunger.

However, what is still lacking is a better understanding of the socially-defined distinction between women's and men's productive responsibilities and activities.

This is an essential prerequisite with priority ranking for the allocation of resources and services to those who most need them and can make best use of them. Equally, it is of primary importance that women, who have to provide the daily food for children and other members of family, have themselves the natural resources means to obtain sufficient food.

Rural poor women and the important role they have: addressed realities

- Women represent the majority of rural poor (up to 70%);
- women carry most of the responsibility for household food security;
- women have indigenous technical knowledge skills and motivation; and
- women tend to remain on the margin without access to critical resources.

Indeed, women's participation has received considerable rhetoric, but there has been less careful paid attention to the differences between women's and men's needs and priorities with regard to resource use, and the barriers women face in achieving control over resources. Here comes again the important role gender mainstreaming could play in natural resources management: land and water, providing the men's and women's needs of both to fulfil the food shortage gap to achieve food security the pre-condition for human security. This is the way to help the poor to build self-reliant households and communities by producing their food to feed themselves, instead of eradicating hunger and poverty through food aid assistance programs.

This is one of the major objectives we are trying to realize in GEWAMED program. The tasks are somehow difficult but could be reached through establishing a direct connection between the hungry poor, particularly women, their need and the assistance provided. This implies that our activities should be concentrated on the following specific targets:

- How to meet the immediate needs of the hungry poor?
- How to improve the quality of life of the most vulnerable people? and
- How to build assets and promote self-reliance to create income through labour activities?

This again recall to the vital role the Gender Mainstreaming could play in water resources management to achieve water security that leads to food security and eradicating hunger, poverty and male nutrition.

GENDER, WATER AND AGRICULTURE

Agriculture is by far the largest user of freshwater. Irrigated agriculture provides some 40 percent of the world's food and in doing so consumes about 75% of the world renewable freshwater.

In most developing countries of the Mediterranean more than 80% of the available water resources are allocated for agriculture. In those countries agriculture and irrigation are under increasing pressure from competing uses as populations increase and higher living standards creates greater demands for water domestic, industrial and tourist uses.

In assessing the gender sensitivity of water for agriculture and irrigation a number of issues must be taken into account, such as those governing access to land, credit and markets and access to water. Failure to address the needs of poor men and women will hardly affect negatively the food production and constrain the food security achievement.

Poor people are likely to suffer, particularly poor women, the access to water. Such access is often more severely restricted to women than men. The fact that women lack control over land in communal areas, they often have no other option but to seek employment as agricultural workers under highly exploitative and insure conditions. In addition to such unsatisfactory conditions, male biases in labour

market regulation, in property rights and inheritance laws all are continuing to restrict and shape activities of women.

POVERTY, HUNGER AND WATER SECURITY: THE LINKS

Water is a key for sustainable development, crucial to human and social development. The lack of access to water is one of the key constraints impeding achieving food security for all in the coming decades.

Poverty and shortage of water are inextricably linked. People who live on an average of less 10 litres of water per day can never escape poverty and achieve sustainable development without first addressing the water scarcity they face. Poor people have few higher priorities than access to safe and adequate water where it is missing.

Water can contribute to poverty reduction through improving the access of poor people to water resources and services so that they can improve their livelihoods and reduce their vulnerability.

The Millennium Declaration (2000) on Water Resources cogently describes the links between poverty, hunger and water security and emphasizes the critical role of improved water management in sustainable development.

Increasing the income levels of the poor will require more water use. Growing and harvesting additional food will require more irrigation and greater exploitation of inland. Providing more people with safe drinking water will require not only more water, but also investments in sewage collection and treatment systems to reduce water resources pollution and water born diseases. Achieving these goals, the 2nd World Water Forum, held in The Hague, The Netherlands, in March 2000, introduced and adopted the idea of water security: a goal to be achieved alongside food security and environmental sustainability.

*Water and Poverty Initiatives,
Conceptual framework
Six key areas of action:*

1. Pro-poor water governance;
2. Improved access to quality water services;
3. Pro-poor economic growth and livelihood improvements;
4. Community capacity building and empowerment;
5. Disaster prevention and mitigation;
6. Management of the environment.

The complex links between poverty and water security are becoming one of the focal points in international debates on sustainable development and, currently, they are actively explored through new water and poverty initiatives.

GENDER: NATURAL RESOURCES PROPERTY RIGHTS AND FOOD SECURITY

Attention to gender differences in property rights can improve the outcomes of natural resource management policies and projects in terms of efficiency, environmental sustainability, equity and empowerment of resource users, the major elements leading to sustaining food production towards food security.

Identifying the nature of rights to the land and water resources held by women and men and how they are acquired play a fundamental role in governing the pattern of natural resource management, increasing food production as well as the welfare of individuals, households and communities which depend on those resources.

Indeed we are in need to a better understanding the existing natural resource property regimes. Property rights include for more than titles and pieces of paper specifying "ownership" of a defined piece of land or other resource. They encompass a diverse set of tenure rules and other aspects of access to and use of sources; all need to be well identified and to be clearly understood. The property rights analysis has too often been focussing on the rights held by a household without any recognition of how these are differentiated between individuals based on gender or other intra-household characteristics.

We would argue that the success of any policy, whether designed to prevent further depletion or degradation of the natural resources, or to enhance the resource base, or to ensure sustainable

resource utilization to attain both water security and food security or to increase food production to improve household welfare is fundamentally depending on our ability to set up the appropriate links between gender and property rights in the wide range of natural resources. In this regard, gender analysis can lead to a better understanding of the complexity addressing the allocation and determinants in property rights to natural resources (Poats, 1991; Moser, 1993; Thomas-Slayter and Rochleau, 1995).

This brings us to the question in the presence of such complexity due to the enormous diversity in property regimes, gender relations, cultural and environmental conditions: how GEWAMED Project will act? The answer to this question is to cast gender analysis lens. Furthermore, to identify critical gender asymmetries in property rights and how these asymmetries affect the efficiency of natural resource use, equity of resource distribution, the empowerment of resource users and the response to their natural resources need to increase the food production moving towards food security and poverty alleviation.

However, in most countries of the Mediterranean, property rights are facing several barriers among them the lack of land tenure and water rights. Many farmers lack secure land tenure which greatly increase the risk of investing in land and water conservation or other improvements which lead to high productivity and efficiency in its use (Besly, 1995; Place and Hazell, 1993).

Land tenure is a particularly important issue for women farmers. In some developing countries, as many as one-third of rural households are headed by women, yet less than 2 percent of all land is owned by women (Meinzen-Dick *et al.*, 1997). Partly, as a consequence, women have less access to credit and inputs, and receive only 5 percent of agricultural extension services worldwide.

Rights to water use are usually closely connected to land rights. In irrigated areas, rights to irrigation water are generally distributed among those who have land in the command area. Where land is unequally distributed, water is also often unequally distributed.

Without title to the resource, women may therefore be constrained from investing, whether through lack of knowledge or an inability to secure credit: extension agents often favour landowners, thereby giving them preferential access to information (Agrawal, 1995).

The establishment and strengthening of the regulatory and institutional framework for land tenure and land market development is a priority. This calls for comparative studies and innovative research in land policy analysis, formulation and implementation, involving, whenever possible, community and co-operative action for land and water management.

It would also be useful to conduct a review of the experiences of land banks and land funds and try to draw conclusions as to which kind of approaches to land banks are providing the most effective, and why.

Looking at these issues through gender lens can highlight some of the short comings of traditional analysis of efficiency. If our goal is attaining beside food security poverty reduction we need to look beyond productivity/yield impacts to also know: the effect of gender differentials in property rights on the control of income and the effect of income control on welfare.

Without rights to manage the resource or exclude others from using it, it is difficult for users to sustain the resource condition. Full ownership rights, including the rights to dispose of the property through sale or inheritance are often assumed to provide the strongest incentive to maintain the resource overtime (Schlager and Ostrom, 1992). Norms and rules can have a strong influence on sustainable development, particularly if users are involved in rule setting, monitoring and enforcement (Ostrom, 1990).

Particular attention should be paid to women's involvement in the local institutions that make and enforce rule governing resource exploitation.

Looking at the complementary inputs required to obtain rights may also shed light on the barriers to equitable access. Often, land titling requires political connections and know-how, as much as cash. Even common property or open access resources may require some private resources to exploit.

Creating a level playing field for women may require addressing these hurdles as much as the formal rules and laws relating to resource tenure.

TOWARDS FOOD SECURITY: TARGETS AND GENDER MAINSTREAMING

Food security is a concept that has been evolved during the 1990s far beyond a traditional focus on the supply of food at the national level (USAID, 1995). The definition adopted by the countries attending the World Food Summit on 1996 and reconfirmed in 2002, accepts USAID's three key concepts: i) food availability, ii) food access, and iii) food utilization. However, a fourth concept is increasingly becoming accepted; namely, iv) the risks that can disrupt any one of the previous three concepts. Availability, access and utilization are hierarchical in nature food availability is necessary but not sufficient for access and access is necessary but not sufficient for utilization. Risk represents a cross-cutting issue that affects all components of the food.

According to FAO (1996), food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritional food to meet their dietary needs and food preference for an active and healthy life.

Increasing food availability can contribute to reduce poverty and malnutrition outcomes (Alderman *et al.*, 2000; Salinger and Stryker, 2001). However, this will happen through targeted interventions that address residual and often widespread, constraints to human well-being. Those targeted interventions should interact across poverty, food consumption and nutrition to achieve the value-added target of enhanced food security.

In this regard, the emerging question is: how to achieve the food security goals? The direct answer is through addressing adequately men's and women's different roles and needs. In most developing countries of the Mediterranean, there are a number of issues illustrating how the human factor has often been overlooked by policy-makers and agricultural development planners. Among those issues, the crucial vital one concerning the lack of gender specific information and analysis both defining the socio-economic and evolving roles and functions of men and women in achieving food security and the improvement of food production and, particularly, about women's contributions. In addition, there is also a trend to rely on analytic approaches that emphasize increasing production, mainly on cash crops, without considering the socio-economic and gender implications.

Reducing food insecurity: needed interventions

The goal of reducing food insecurity through consumption smoothing, improvements in livelihoods and investment in human capital depends on implementing consistent and reliable interventions that can promote behaviour change at the household and community levels and that contribute to longer term economic gains.

Here, it is wisely to stress that only gender mainstreaming can ensure that attention to gender equality is a central part of agriculture and rural development interventions in the different areas related to food production improvement and achieving food security.

The linkages among different social and economic activities, as well as the differences in the ways that men and women are involved in agricultural development and food security programmes, projects and policies and how both are affected will be discussed, giving emphasis to the barriers and major constraints rural farmers and, particularly, the poor women are facing.

- **Access to agricultural support systems**

If farmers are to increase food production and food security, they need better access to agricultural support systems, such as credit, technology, extension service and agricultural education. Both women and men smallholders and poor farmers have frequently been cut off from these essential agricultural support systems which seldom take into account the different responsibilities and needs of men and women farmers. In spite of their enormous potential and their crucial roles in agricultural production, women, in particular, have insufficient access to production inputs and support services.

Women's access to and use of agricultural support systems is also severely limited by the heavy burden on time and energy that results from their triple responsibilities-productive activities, reproductive activities and community management.

- **Adequacy of and access to education, information, training and extension**

To achieve food security one of the points should be carefully considered is to be sure that the information, training and extension services respond to the needs and skills of and constraints faced by poor men and women.

Extension/research/training packages may be ineffective if not suited to the different knowledge bases, labour and time availability of both men and women. To mitigate the risk of non-adoption, gender-specific knowledge and time constraints should be taken into account. Furthermore, we must be sure that the interventions are reaching the women most involved in the activities as well as enhancing literacy, management skills and nutritional education.

The importance of information flows and the capacity of individuals to use such information not only relates to behaviour change but is key element in enabling households to enhance their livelihoods and hence, protect themselves over the longer-run.

Other issue which is crucial to agricultural development and food security and not receiving the desired attention is the extension services. A FAO survey showed that worldwide, female farmers receive only 5 percent of all agricultural extension services and only 15% of agricultural extension agents are women. In Egypt, where women make up more than half of the agricultural labour force, only 1 percent of extension officers are female. This reflects the lack of information and understanding about the important role played by women.

In most countries of the Mediterranean we are in need of extension services more responsive to the women's demands and with programmes tailored to address women's priority needs. Extension programmes that fail to take women into account also fail to address the improved technology and methods that might yield major gains in productivity and food security. Extension services should be subjected to internal and external adjustments to respond effectively and efficiently to the rural men and women poor farmers. Food security to be achieved extension services programme must be more strategically planned, need-based, participatory and problem solving.

Human development is considered as one of the most critical factors, if not the most critical, of economic growth, food security and poverty alleviation.

The risk of an unequal pace of development of human capital and in the acquisition of knowledge and information, in general, is acutely felt. How to promote an equitable access to the means of development capacity is one of the highest priorities to achieve food security and to fight against hunger and malnutrition. However, further quantitative and qualitative research, including disaggregation by gender is still needed for an appropriate policy guidance and formulation. Indeed, for both men and women, human development entails massive investment in education, health and other social services. Here the following questions are to be raised:

- ❖ What forms and combination of investment in education promise to be most effective and efficient in terms of increasing food production, achieving food security and poverty reduction?
- ❖ What directions can be recommended for external assistance to play a catalytic role in this regard?
- ❖ What policies, legislation, institutional arrangements and programmes can enhance the organizational, marginal, advocacy and leadership capacities of the poor, as well as their capacity for self-help income and employment generation?
- ❖ What role can be central and local governments and organizations of the civil society play in this regard?

Those are crucial questions seeking satisfactory answers. The GEWAMED Programme through its well oriented activities can provide, on one hand, the needed information and, on the other one, the drawing and analysis on the experience of past success and failures to find the reasonable reply to such raised issues.

Food security and to be achieved successfully implies the equitable sharing of benefits and the participation of women and men farmers within the implementation framework of the special programme for food security, design training and extension programme. In addition, emphasis should be given to the use of information and communication technology to improve rural women's and girl's access to education and training on the sustainable use and management of natural resources.

- **Access to capital, micro-credit initiatives and marketing services**

Access to capital is a major factor for improving the material conditions of small farmers and, particularly, the poor men and women.

In order to improve and increase food production to achieve food security access to financial capital is needed. Equally, installing major improvements such as irrigation pumps or acquiring new technologies that increase further yields is very hard to realize without access to long-term credit. Greater access to credit by the rural poor and, in particular, the women would entail improvements in a whole range of financial services, including appropriate saving facilities, banking standards and management, forms of insurance and the support of a variety of financial structures in the supply of credit.

In most developing countries including those of the Mediterranean, smallholders, particularly women, often face difficulties in obtaining credit. This is a direct consequence of their lacking access to land, participation in development projects and extension programmes and membership in rural organizations, all of which are important channels for obtaining loans and credit information.

In this regard, it is highly recommended to carry out international comparison and synthesis of the lessons that can be learned from micro-credit initiatives undertaken in different countries over the last decade or so, of their advantages and short comings. As a successful example the Grameen Bank in Bangladesh, which first pioneered the micro-credit approach in 1976, currently reaches more than 2 million people. Since it was founded the bank has lent more than US\$ 2.1 billion, most of it in form of loans of a few hundred dollars for smallholders mostly poor women and men farmers (FAO, 2003). For the Mediterranean developing countries, it is needed to move from general knowledge to the analysis of specific implementation mechanisms, facilitating awareness of the most effective practical modalities of micro-credit for food security (Abu-Zeid and Hamdy, 2006).

Beside the difficulties that women are facing in obtaining credit, equally is the case regarding marketing services that would allow them to turn surplus into cash income. Compared with men, women face particular difficulties because marketing infrastructure and organizations are rarely geared towards either small scale producers or the crops that women grow.

The question to be raised and which should have major interest of the partner institutions and the experts involved in developing the GEWAMED Programme is how to increase the equality of access to a wide range of agricultural support system and, particularly, the ones related to capital, micro-credit initiatives and marketing services.

- **Access to rural organizations**

Participating in rural organizations such as farmer's organizations, cooperatives and farmers associations -the water user associations (WUAs), etc.- all are appropriate ways for poor rural women and men to gain access to resources, opportunities, and a much louder voice in local and national decision making, beside obtaining technology, information, training, education and credit.

Participation is an essential ingredient of gender-responsive, participatory rural and agricultural development policies. Rural women and men need to be empowered so that they can take development into their own hands. Capacity still needs to be built as the fundamental basis for their full participation in all spheres of society (economic, political, social, cultural) at the community and national level.

Using gender analysis lens, it is quite apparent that women are frequently deterred from joining because membership is often restricted to recognized landowners or heads of household. In many developing countries of the Mediterranean, women often do not share equally in either the decision making or the benefits and are excluded from leadership positions of these organizations.

Major efforts had been taken to promote women's participation in rural organizations, however, experience gained and learned lessons have shown that women's empowerment often requires a step-by-step process to remove the barriers to their membership in those organizations blocking the important role they could have as householders in sustaining food production, to attain food security and to eradicate poverty and malnutrition.

The road towards food security is to a high extent lying on the effective role the women could act in increasing the food production and this requires to give them support, individually or collectively to enable them to gain the knowledge and self-confidence needed to make choices and to take greater control on the natural resources management and use and to have an equitable access to the agricultural support systems.

If such barriers are to be removed through gender analysis approach, this gives the impression that the way towards food security is even shorter and less tedious than before.

WHAT IS RECOMMENDED TO BE DONE?

In view of the issues included in this paper concerning mainstreaming gender in water resources and food security, the question to be raised and which should have major interest of the partners institutions and experts involved in developing the GEWAMED Programme is how do we at the Mediterranean see the future of women, water, food production and food security and how to work over the next coming years to mainstream gender dimension in water management and the agricultural supporting systems for food security, poverty alleviation and malnutrition.

In this regard, further work is recommended to be done including the following:

- to develop gender-sensitive guidelines and training materials for improving the business management and marketing skills of women and men farmers;
- to produce and disseminate information materials to promote the equitable participation of women and men in new enterprises and equitable access to support services;
- to know the effect of gender differentials in property rights on the control of income and the effect of income control on welfare;
- to develop gender-sensitive training materials on a broad range of topics for institutional capacity building and to encourage women's participation in capacity building training activities;
- to establish and strengthen of the regulatory and institutional framework for land tenure and land market development through comparative studies and innovative research in land policy analysis, formulation and implementation, involving whenever possible community and cooperative action for land and water management;
- to conduct a review of the experiences of land banks and land funds to decide on the most effective kind of approaches to land banks to be recommended;
- to carry out international comparison and synthesis of the lessons that can be learned from micro-credit initiatives undertaken in different countries to implement the one to cope with the local socio-economic conditions;
- to analyse critically the experience of women that have succeeded in establishing food related enterprises and provide useful guides to promote such processes;
- to promote women's participation in rural organization which often requires a step-by-step process to remove the barriers to their membership;
- lastly and importantly, the road towards food security is to a high extent lying on the effective role the women could act in increasing the food production and this requires to give them support, individually or collectively to enable them to gain the knowledge and self-confidence needed to make choices and to take greater control on the natural resources management and use and to have an equitable access to the agricultural support systems. If such barriers are to be removed through gender analysis approach, this will make the way towards food security to be shorter and less tedious than before;
- we need a more extensive knowledge about the people affected by poverty and devise programme and policies addressed to reduce their number.

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