

Rural women and environment in Kyrgyzstan: women's initiatives for sustainable development and life in harmony with nature.

Central Asian countries are countries with a dominant agricultural sector. For regional review I'd like to share experience and situation in Kyrgyzstan. Deterioration of public infrastructures after the collapse of the Soviet Union has resulted in poor living standards and aggravation of the social situation. 37% of the people in rural areas live below the poverty line compared to 23% in urban areas. As far as income per capita is growing slowly, Kyrgyzstan has limited financial means to increase expenditures on key social and physical infrastructure that could significantly increase the quality of the living conditions among the population. The population of the Kyrgyz Republic of 5.5 Million consists of 64% rural residents. Among rural residents, about 70% are women.

Still there are issues that also have to be considered in relation to elimination of discrimination against women in rural areas in order to ensure their participation in development processes based on equality principle between men and women, and also to ensure their right to enjoy dignity of life, adequate living conditions, in relation to housing, sanitation, electricity and water supply, transport and communications.

Beijing Platform for action states that "All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world».

Rural women in Kyrgyzstan still face many problems related to housing and living conditions, access to natural resources. .

Economic crisis and the deterioration of the living conditions of rural women placed them in the most vulnerable position. Financial problems and growing poverty lead not only to economic problems, but also to the problems associated with health, especially reproductive health, gender discrimination in various spheres of life of rural women.

Living conditions in the rural areas of Kyrgyzstan represent the living standards which are far behind from those available to urban residents. For example, the lack of heating, lighting, fuel and safe sanitation, poor quality of drinking water and malnutrition-these are the most common problems faced by rural women. As a result, rural women have health problems that are closely connected with limited access to safe drinking water, lack of proper sanitation and poor hygiene. As a confirmation for the presence and spread of problems connected to water supply, the following facts have to be considered: intestinal diseases are the main cause for child mortality, whereas there are 35 deaths per 100,000 children under 5 years. As a result Kyrgyzstan is among the five countries with the worst statistical indicators among the pan-European region. Safe sanitation and safe sewerage system, as well as the conditions for proper hygiene are still not available for many rural women.

Drinking water supply in rural areas of Kyrgyzstan is provided mainly by underground sources of artesian water, they accounted for 80% of the drinking water and water for household needs. More than 40% of the centralized waters supply system of the country is completely worn out and needs replacement. Kyrgyzstan which produces more than 90% of its electricity using hydroelectric installations faces the imminent energy crisis since 2008. Old equipment, lack of

financial resources, corruption and low water has led to the practice of increasing power outages across the country. These circumstances place rural women into vulnerable position in which they are taking the brunt of the energy crisis. The study of NGO "Alga" conducted in 2012 showed that the burden on rural women in the management of the household chores increases significantly in winter period. Women particularly emphasized that during the winter in comparison with summer period they have to spend more time on household chores. Additional activities include inciting furnace for home heating and cooking, as well as boiling water for household needs. Rural women do not use electricity while managing everyday chores due to the regular blackouts and high prices, also there is no gas supply in the villages.

Hygiene and cleanliness are the cultural norm for rural residents across the country. However many residents of Kyrgyzstan have to live in conditions with poor water and sanitation infrastructure. Traditionally, in rural families women and children are responsible for collecting water: 72% and 84% respectively.

Limited access to water exacerbates poor conditions for personal and domestic hygiene, which again worsen the situation of family members, especially women and children. The majority of rural women evaluate their sanitary conditions as very poor.

Many rural women who participated in the study experience psychological and physical discomfort during menstruation due to the lack of privacy and adequate sanitation. The issue of access to the conditions for hygiene during the menstrual cycle as a rule is not discussed, because it's a kind of taboo in families.

Currently, pit latrines and lack of wastewater treatment- the most typical characteristic for sanitation systems in rural areas, which is the cause of many problems related to hygiene and sanitation. A pit latrine is a common sanitation practice in rural areas of the country. Such toilets when being filled usually are not cleaned, but simply transferred to a new place whereas people dug a new pit latrine. The toilets in the villages are far away from homes, they are difficult to use at night or during the cold periods, especially in winter. This brings additional difficulties especially for women and adolescent girls who often complain that they have health problems (for example inflammation of reproductive organs.) Women are also the ones who responsible for cleaning the toilets.

Workload of rural women with domestic work is very high. Lack of developed infrastructure (such as electricity, piped water, sanitation and hygiene) further exacerbates the already difficult situation of rural women, since women are responsible not only for the household but also for the health of each family member. Large expenditures of time and great efforts which are required to meet the basic needs of life negatively influence the potential opportunities for income-generating activities of the family, which worsens the already precarious situation of rural families.

Women are very much concerned about environmental issues. They want a comfort life that will give them (a source of dignity) dignified life standards. But they also want to live in harmony with nature, to save (preserve) environment.

But in spite of challenges rural women look for alternatives methods to improve and sustain their lives. One of the examples is activities aiming to create local capacity for improved rural living standards via sustainable energy and sanitation in rural Kyrgyzstan. There were introduces alternative and affordable technologies as energy effective stoves, solar water heaters, solar fruit dryers and ecological sanitation technologies as urine diverted dry toilets.

An energy efficient stove burns fuel more efficiently and produces less smoke than conventional ovens because of better combustion technology. Different types of stoves have

been installed, simple ones for cooking only and ones for heating where the hot waste air is guided through space inside an interior wall in the house and most ovens are used for both heating and cooking. Through installing such a stove, a family will not only reduce household fuel costs, but also may improve family's health.

Warm water for washing, cleaning and laundry is an important factor for comfort and hygiene in daily life. Sun can also be a source of energy for the household. Kyrgyzstan has an annual average insolation of 4.3 KWH/m²/day. Solar water heaters, also called solar collectors, use the energy from the sun for water heating and work without electricity supply. They provide hot water for showers, kitchen use, washing clothes and depending on the size, heating the house. Households using solar collectors have no extra fuel consumption for warm water heating and save money which they would otherwise have spent on fuel. Solar collectors are especially applicable in countries with high solar radiation and cold winters. They are used everywhere, but especially in rural areas and mountain areas with insecure energy supply in harsh winter-times.

The urine diverting dry toilet (UDDT) or ecosan toilet is an innovative technology which can be implemented inside the house or attached to the house. The ecosan toilet does not need water for flushing, neither smells nor attracts flies. Urine diverting toilets do not mix urine and faeces by using a separating toilet seat. Urine is collected and stored in a reservoir. Faeces, which are collected underneath the toilet, must be directly covered by dry materials such as saw dust, soil or ashes or a mixture of those. The toilet products – urine and faecal compost – can be used as organic fertiliser. Urine is an excellent liquid fertiliser containing nitrogen, phosphorus, potassium and many micronutrients. The fertilised plant will grow faster, develop more leaves and produce higher yields. Faecal compost is an excellent soil conditioner and fertiliser. The safe application of urine and faecal compost requires some basic hygienic agricultural considerations (according to WHO guidelines, 2006).

The three technologies EES, SWH and UDDT are suitable technologies to improve the living conditions of rural women. Study conducted by our organization proved that villagers who are challenged with current problems in daily routine are ready to take risks to create comfort and security.

Up-scaling of the innovative energy and sanitation technologies can play an important role in developing new positive understanding of gender roles. It is significant that constructed technologies can contribute in improvement of health situation, create opportunities to save resource and increase level of income in families. Traditionally, women take care for family and house. Thus, women in many cases would be responsible for the effective functioning of UDDT, solar water heaters or energy effective stoves, but this new role of women potentially will increase women's position in families as women will get opportunities to control resources in the families. Men can especially benefit by an increase of employment. In this view, the technologies can stimulate local economies in Kyrgyz rural areas.

Recommendations

- Adequate sanitation, warm water and energy belong to the basic infrastructure for a healthy economy. In order to bridge the divide between rural and urban areas and make the rural life more attractive, adapted sanitation and energy solutions such as EES, SWH and UDDT are feasible and needed, they will ensure for women a dignified life.
- Political will and support is needed in order to up-scale the technologies. Safe and sustainable energy and sanitation are of national benefit. Given the enormous costs in public health every euro investment in sanitation can have a return rate € 4.80 on national level (Who, 2003). The energy efficient technologies are measures for climate change mitigation.

- Capacity development is crucial for up-scaling the new technologies. Owners of constructed technologies pointed out that they understood benefits after one year exploitation of the technology. Additional awareness raising, trainings and consultations at the beginning stage should be considered.
- The quality of the technology is crucial for further replications. Existing capacities and knowledge of local communities, including community based organization, should be used as they have some trust and credibility in the communities and able to embed and secure the knowledge and know-how. Guarantees on constructed objects is likely to facilitate the replication. Local business can play a role in this.
- Small-scale entrepreneurship is a key for long term and sustainable up-scaling of the technologies. Continuous capacity development is useful to improve and sustain the technologies
- Currently, people are ready to invest in the technologies however they cannot pay the full cost directly by themselves. Sanitation and energy solutions should be supported in terms of financial incentives and an enabling policy framework.
- Social financial mechanisms for non-commercial infrastructure or social housing in rural areas are needed. There are many financial institutions in the country, local authorities and stakeholders can grant additional financial resources to the villagers who want to invest in energy-efficiency measures to overcome financial barriers.
- At national level, programmes for improving living conditions in rural areas should be prioritised and receive technical and financial support as well as more educational programmes for technical students.