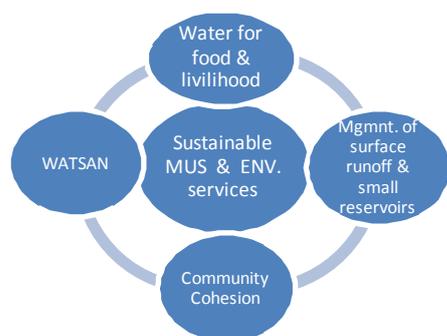


# Multiple-Use water services (MUS) for enhanced Land & Water Productivity, Gender Equity and Poverty reduction

## A Policy Brief

The research outcome on RCSD approach to Multiple-use water services (MUS) is about taking people's multiple water needs as the starting point and in identifying opportunities within the water limitations & changing environment, in planning and design of existing cropping and water resource systems for up-gradation. Resourceful planning for multiple uses has helped in realizing multiple benefits towards food and income security, better health, drudgery reduction and gender equity.

RCSD project on Strengthening Indigenous people's response to Multiple Use water services supported by ARYGHAM for food, water, livelihood, safe health & sanitation security is an innovative approach in the implementation of MUS and for its scaling up at multiple levels. Project partnership established with thirty- seven Resource Management Groups has lead to the establishment of innovated and successful MUS models at the homestead and community-scale for food security, poverty reduction and gender equity. While a simultaneous WATSAN initiatives covering household water treatment and hygiene education within the Groups, school children and the community have helped in gaining access to better human and environment health that further supplement & strengthens the MUS.



**RCSD-MUS driver management framework**

RCSD-MUS implementation framework is of a localized approach which is also a learning

experience model for continuous improvement and adjustments.

### **MUS Model**

Recognizing the fact that MUS offer an effective route to improve food and livelihood opportunities amongst the poor and women and also leads to environment benign, the project field tested and analyzed the MUS at the homestead-scale (e.g. home gardens, homestead ponds) and community-scale (e.g. community reservoirs) by supporting crop water management efforts in home gardens & in farm fields from supplementary irrigation gained from ponds/reservoirs, support additional productive water sub-sectors (e.g. pisciculture, ducks rearing) on same water resources for the same people, make more water available for bathing, sanitation and drinking, leading to the reduction in the incidence of water-borne diseases improve health, food and nutritional security and finally contribute to surface & ground water management for sustained land and water productivity.



*Homestead-scale MUS:* comprises of averaged minimal home garden area (0.09 Ha) with seasonal farm pond (0.06Ha) where home-gardening, pisci-culture and a duckery unit is promoted for food, nutrition and income security in the face of rising food prices and climate uncertainties. An average annual earning of INR 16700/- is generated from the sale of multiple produce in addition to food consumed. Thus homestead not only increases food production, but also cuts expenditures on food and generates income.

Homestead-scale MUS helps youth, women, small farmers, land-poor and the elderly is



setting up small scale village enterprise in addition to increasing water availability for domestic use and for the livestock at the nearest point.

*Community-scale MUS:* Based on inferences on the local hydrology, surface water management mostly based on rain water was identified as highly important for increasing MUS opportunities (*rain-fed agriculture, fisheries, livestock, domestic, environment*) at the community scale. Community scale activities related to re-establishing of existing natural communal farm pond linked to old water channels and other large surface water bodies for increasing water storage capacity and in improving the local hydrology. Promotion of Community-scale MUS helps in the



allocation of water and public resources to almost all the section of the society and supports system sustainability. Community scale MUS improves water availability and improves groundwater conditions at the landscape and helps in the promotion of major field crop (*food & cash*). RCSD-MUS field trials on winter paddy with better knowledge on Agronomic & irrigation management practices increased production, “more crop per drop” by 300 kg per 0.16 ha and rapeseed irrespective of traditional and improved varieties showed an increase in production by 60 kg per 0.16 ha. These trial results have set reversal on the failing food and income securities, where rural communities’ report of food insecurity extending to a period of nine months compared to three months (*Bhada, Ahin, Kati*) in the past.

### **Food & Livelihood as drivers of MUS**

In rural areas almost 100% of the food and livelihood based activities either at the homestead or the field are strongly water-dependent. MUS activities established that water for multiple uses in and around homesteads and the field promotes multi-faceted livelihoods that provides food & income security and also helps in diversifying people’s livelihood options. Thus food and livelihood security based on inferences drawn from the field trials on Homestead & community scale interventions becomes important driver in managing water resources for sustainable MUS. However management of increasing pest & disease incidences, procurement of quality planting material in time which are high yielding and resistant to disease is a challenge. Thus overcoming the challenge has been through imparting knowledge on ways to select planting material of better quality with the available germ plasma of the village, where based on the approach a number of banana plantation has come up within the MUS sites.



### **Community cohesion for sustainable MUS**

Multiple-use water services process generates community cohesion amongst members of similar socio-economic stature which strength them as a group not only to fight poverty and effectively manage the natural resources, but most importantly bring about the human bonding which leads to sharing and caring of the water resources and systems people depend upon leading to their sustainability. MUS creates social development was exemplified in the project, where initially the project started with seven female lead MUS user groups to multiply into thirty seven MUS user groups within a period of twenty four months covering 74% of the total household. It is observed that these resource poor MUS groups on getting organized on their own based on the project achievements have generated access not only for increased food, water and livelihood opportunities but also cash and human capital for helping one another in times of need.

Following the capacity building activities on agronomic practice, livelihood & Safe water and sanitation, to bring about sustainability into the MUS process, RCSD concentrated on promoting best practice on financial management amongst the user groups to overcome the challenge in organize the human capital into effective and sustainable resource management & income generating groups.



challenges. RCSD project on MUS is based on the above principles.

**WATSAN as drivers of MUS**

Participatory mapping on water & sanitation behavior revealed that majority of the community were habituated to open defecation and source water protection was absent and diarrhea & dysentery disease were the major health issues, which intermittently impaired economic and social development. An MUS approach provided adequate water for washing, sanitation and drinking at the nearest point, while promoting safe Water, Sanitation and Hygiene (WSH) behaviors through hygiene education amongst school children and the community as a parallel intervention component helped bring about reduction in the incidence of water-borne diseases and sustainability to MUS & environment protection. While simply having water in sufficient quantities for drinking and hygiene is important, but providing safe quality water in adequate quantity is invariably important. To bring about the effectiveness of MUS, low cost but effective household water treatment technologies i.e. Biosand filters and SODIS was disseminated on pilot initiatives with localized capacity building with potentials for building up of "Safe Water Enterprise". Improvements in domestic water quality and hygiene has reduced illness and free up labor and time spent in collecting potable water by women and girls in particular and improved man-day's of work and has cut down medical expenses at the household level.



**Management of surface runoff & small reservoirs**

Strengthen integrated management of rainwater in small reservoirs helps in effective and equitably distribution to water for multiple-uses. Supporting seasonal water accumulation in the wetlands and semi permanent water bodies improves the declining seasonal water table conditions; groundwater depletion and extends opportunities for small-scale farmers to farm during the monsoon and during the dry winter period resulting in increased land and water productivity, food security, improved livelihoods through crop, livestock, aquaculture production and increasing provisions of domestic water for health and



hygiene in addition to supporting a variety of flora & fauna and various ecosystem goods and services. With

changing climate, declining and uncertainties in precipitation trends, management of surface runoff from the farmer's field to the landscape level becomes an inevitable option to improve water productivity gains. Developing and supporting community planed sustainable MUS models leads to safeguard of natural storage capacity of reservoirs at community scale and help mitigate water security



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