Empower women in agriculture through promotion of efficient and ergonomic farm tools and equipment’s

Background:
Agricultural is the main occupation of rural families. Rural women are helping to 'feed the world' using inadequately designed and poorly made hand tools, and lack the income, credit and training needed to shift to more efficient and productive technologies. While some progress had been made in improving post harvesting equipment for women, little has been done to provide better tools and implements used in agricultural production. The farmwomen are engaged in the most tedious and back-breaking tasks in crop fields. Traditionally women were using manually operated farm tools and equipment. Their work life is characterized by long hours of work, awkward postures and drudgery experiences due to workload and unsuitable farming equipment’s. Of late, it has been realized that the needs of men and women with respect to technologies differ because of the differences in preference, priorities and working environment. In agriculture, both men and women perform the farm operations, but still the women workers do not use machines as mostly these have been developed keeping male anthropometry in mind. These equipment’s are not suitable for women as the ergonomic characteristics (aerobic capacity, strength, anthropometry, physiological workload, work preference, clothing patterns and safety issues) of farmwomen differ from that of men. The drudgery of women is more pronounced in paddy-based farm operations. This could be suitably addressed through introduction of women friendly ergonomically designed farm tools and equipment through well designed and targeted interventions. It was observed that in Odisha, there has been an increasing trend in participation of women in agricultural labour force. Majority of them are employed on a seasonal and often casual or temporary basis. They largely use traditional methods/ tools as many of the farm equipment’s are not suitable and are subject to extreme drudgeries. Therefore, to address the drudgery and occupational health hazards & safety issues and increase work efficiency of farm women, gender friendly tools & equipment should be made available with respect to specific crops, need based locations and anthropometry of women farmers.

Initiative:
The program “Empowering women in agriculture through promotion of efficient and ergonomic farm tools and equipment’s” therefore intends to use a combination of carefully sequenced supports to reduce the women’s drudgery issues in paddy and vegetables-based farm operations, increase work efficiency and enhance their income.

Objectives
➢ To study the participation of women and use of existing tools and equipment in rice and vegetable cropping system
➢ To identify the technological needs and gaps in rice and vegetable cropping system
➢ To introduce women friendly tools and equipment for regular usage in the targeted area through capacity building program
➢ To assess the drudgery reduction parameters for impact evaluation

The Prerna initiative has been taken up in two Pradan teams, Lamtaput, Korput district & Jashipur, Mayurbhanj district since Oct 2017. 40 + villages impacting more than 2000+ women farmers. Agriculture is the primary livelihood for almost 60-70 percent households though many of them must depend upon only rain-fed agriculture due to very poor irrigation facilities available. ‘Paddy’ and ‘Millet’ are two major food crops currently practiced. Women work as a labor starting from seed sowing, nursery raising, transplanting, weeding, harvesting to threshing manually. Due to this all manual labor work woman must go through huge drudgery causing physical problems. It is more painful for pregnant women. In these circumstances PRERNA is an opportunity for such farm women. The introduced farm tools not only reduce the drudgery but also it will help to uphold improve practices of agriculture. These two components are complementing to each other.

Prerna has identified specific professionals to spearhead the project. These professionals were oriented around the project by PRADAN and CIWA. They have also attended the central training at CIWA for Master trainers. Along with these, 11 master trainers were identified and groomed 11 master trainers to support the villages at ground level in the work like conducting baseline survey, creating awareness and use of tools, ensuring crop POP etc.

Looking at the context and agricultural practices total 14 types of farm implements have identified like,

a. Seed Treatment Drum
b. Dry Land weeder
c. Paddy marker
d. Mandwa weeder
e. Battery sprayer
f. Improved sickle
g. Manual paddy winnower
h. Pedal operated thresher
i. Power thresher cum winnower
j. Power weeder cum ridger
k. Fertilizer sprayer
l. Power sprayer
m. Parboiling unit
n. Hanging type double screen grain sever
Starting from concept seeding, baseline survey to physical execution, Prerna has involved the community-based organizations like SHG, village level organisation (VO)/cluster level federation. They have played an active role in selection of master trainer, participated in different training program for crop POP, use of different tools, finalizing the place for Custom hiring center (CHC), fixing norms for CHC, monitoring the progress etc. Register maintenance for record keeping (both PRADAN & Master Trainers) & bi-weekly meeting of Master Trainers to plan out and make strategy to implement the work at ground level.

**Implementation:**

- Professionals engaging along with Master trainer-demonstrating them in helping them out as in facilitation at village level, demonstrating use of implements and follow up.

- Master trainer engaging with village farmers-giving awareness about the project, demonstrating the use of implements along with flex and will ensure the use of it.

- Village organization is the center point of intervention at village & representative selection are done after each meeting

- Training & capacity building of Master Trainer by PRADAN are in a regular basis

- Calendar wise planning for proper implementation to help the Master Trainers

- Organizing exposure visits & Preparation of flex around implements and POP

- Demonstration around POP (package of practice) of each crop with use of implements

- CHC selection and its orientation around its role and log book maintenance

**Impact:**

- Women farmers are now a bit pro on use of farm tools. Women farmers excited in using power equipment’s

- Women farmer for the first time has access and control over farm tools, started using.

- In tribal pockets women farmers are breaking stereo types of using sprayer. Earlier the use of tools was only the male members.

- Drudgery reduction and work transfer from women to men due to farm implements

- Women farmers are enjoying the farm tools as it gave them leisure time

- A sense of togetherness through collective use of tool.

**Partnering Institutions:**

**About Central Institution for Women in Agriculture (CIWA)**
ICAR-Central Institute for Women in Agriculture (ICAR-CIWA) is a first of its kind institution in India that is exclusively devoted to gender related research in agriculture. The institute has been undertaking research on various issues affecting women’s role and participation and the emerging opportunities in agriculture. It focuses on participatory action research in different technology-based thematic areas involving farm women to make farm technologies suitable for them.

About Pradan (Professional Assistance for Development Action)

Professional Assistance for Development Action (PRADAN) was founded in 1983 by young professionals inspired by the belief that well-educated people, with empathy towards the poor, must work directly with them at the grassroots to alleviate mass poverty in rural India. PRADAN seeks to realize its vision of creating a just and equitable society where everyone lives and work with dignity by building robust collectives of women that will strive for large-scale change in human condition. PRADAN works with 588,289 families in 7,434 villages spread across 37 districts in 7 States.

This is a story of Dabuguda village, one of the villages under Prerna. Agriculture across Lamtaput block and all over Odisha is the mainstay of majority of the population. Women play an important role in agriculture however they are not recognized as a farmer. Also, with less tools and implements, they usually did weeding or any farm practices with hands which increased their drudgery. Most of the farm implements were made and use for men looking at the physical, strength, etc. So, Prerna not only wanted to give identity to the women as a farmer but also introduced gender friendly farm equipment’s. The implements were made in such a way that it was easier to use for women and hence drudgery was reduced.
It has become easier for me, now I don’t have to sit whole day weeding grass on field”, says Kamla Malik, Dabuguda Panchayat, Lamtaput
“I hire tools from CHC, I came to know about its uses during training and hence I am using it. I even told my neighbors about the benefits of it”, says Parbati Malik

PRADAN has been engaged in Dabuguda village for past 7 years in livelihood, strengthening institution. There are 4 SHGs and VO has been the central point of engagement every time. After Prerna people got to know the use of farm implements, benefits after which women of those villages started using the implements at a very large scale. More women were involved and showed interest. Focus of the intervention was around women, their role in agriculture and their specific issues. Gradually women have started realizing them as farmer.

“Earlier, it takes 2 months to carry out weeding in ginger plot of 1 acre land, however, this year after using power weeder, it took me hardly 3 hours in a seven days gap” Chanchala Malik
“With use of battery sprayer, my hand pain has reduced drastically, and my work got finished within 30 minutes. Last year, I had experience of shoulder pain after spraying”, Bhagabati Malik

**Few tools:**

**Improved Sickle:**

Sickle is one of the prime tools used for several activities in agriculture. In case of paddy it is used for harvesting the crops. Improved sickle is a women friendly tool of weight less than 200 gram and it has serration at the edge. Women can easily operate it while cutting crops and helps in reducing drudgery and saving and energy. This kind of serrated sickles does not require the sharpening of cutting edge frequently. It also provides safety to the workers due to its better construction.
Pedal operated Paddy Thresher

Pedal operated paddy thresher used for threshing paddy after harvesting and the output is 75-80kg/hour. It helps to reduce the drudgery involved in paddy threshing operation as bending posture is avoided and arms are not to be raised for above shoulder height as in case of traditional method i.e. beating on a platform/stone.

Rice Winnower

Winnower is a tool used for post harvesting activities such as winnowing of paddy in large amount. Traditionally farmers depend upon the wind for winnowing. But with this there is no need to wait for wind in this operation with the equipment as required in traditional method. The equipment can be operated in shed to avoid any immediate losses due to sudden rain. The output is 200-220kg /hour.
Hanging type Grain Cleaner

It is used for cleaning grains after harvesting and winnowing. Apart from the drudgery reduction of worker per unit and 200kg/hour of output, the productivity of the worker increased more than four times as compared to traditional method.
Paddy parboiling drum

In rural India, women predominantly carry out the parboiling of rice for their consumption. Parboiled rice (also called converted rice) is rice that has been partially boiled in the husk. The three basic steps of parboiling are soaking, steaming and drying. About 50% of the world’s paddy production is parboiled. This is a very tedious process and it requires 12-16 hrs/day to parboil about 30-35kg of paddy. Improved Parboiling Unit is a women friendly technology for drudgery reduction & widely preferred by farm women.