

**Food security of the village remains unaffected during the recent natural calamities - Thanks to the Millets-based, Mixed Farming!**

**-The Success Story of Pagarpadi Village**

Aditya Singhdeo, and Kanna K. Siripurapu,  
NIRMAN, Email: [nirman96@gmail.com](mailto:nirman96@gmail.com)

**Background:** Indigenous agriculture practices, crop diversity and indigenous seed diversity had been eroding at the Pagarpadi village. In addition the food and livelihood insecurity of the villagers was also on the rise.

**About the Village:** The village Pagarpadi is located in Gumma Gram Panchayat, Tummid Bandha Block of Kandhamal Distirct of Odisha. The village has 25 households, with a total population of 139 (66 men and 73 women). Pagarpadi is a homogenous village, all the households belongs to Kutia Kandh community. Kutia Kandh belongs to the list of Particulraly Vulnerable Tribal Group (PVTG) of India. All the households are below the poverty line (BPL). The major natural resources and land use practices at Pagarpadi includes agricultural land and forest land. The recorded



agriculture land is spread in an area of 39.67 acers, and divided into upland, medium land and low land. In addition an area of 25.2 acers of land had been settled under individual rights of the forest rights act (FRA) in the year 2010. Major occupation of the villagers is agriculture. Major crops cultivated at the Pagarpadi village include indigenous varieties of millets, paddy, pulses, and oilseeds. In addition to the cultivated crops, villagers also collect uncultivated non-timber forest products (NTFPs) such as wild tubers, mushrooms, edible leaves and fruits from the surrounding Kothagarh elephant sanctuary. Primary income generation activities of the households include sale of the surplus oil seeds, millets and pulses, secondary income generation activities include sale of the non-timber forest products (Sal and Siali leaves and hill broom) collected from the surrounding sanctuary and supplementary income generation activities include wage labour.

### **The Status of Sustainable Agriculture**

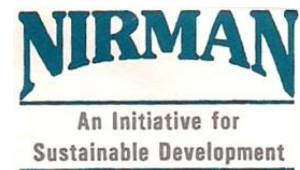
**Before Intervention:** The Kutia Kandh practices shifting agriculture along the hill slopes. Shifting cultivation is entirely a rain-fed agriculture system. There was gradual erosion in both the indigenous agricultural practices and crop varieties at the time of Nirman's intervention at Pagarpadi village. The root cause for erosion of the indigenous agricultural practices and crops varieties was due to persistent drought conditions, changes in rainfall patterns, and restrictions of the forest department. As a result the area under shifting cultivation has decreased significantly at the time of intervention. All the above mentioned drivers led to decrease in agriculture productivity and loss of the indigenous seed varieties.



**After Intervention:** In the above scenario Nirman intervened at Pagarpadi village in the year 2012 to restore the eroding indigenous farming practices and crop varieties through promotion of mixed, bio-diverse and sustainable agriculture practices. As the first step, a baseline survey of the households was conducted to take stock of the household income and status of the Indigenous agriculture practices, crop varieties and seed diversity. A series of village level meetings on erosion of the indigenous crop diversity, indigenous agriculture practices and sustainable agriculture was conducted to motivate the

villagers to revive their indigenous agricultural practices. Women groups were convened at the village and seed support was extended for individual households. Under the seed support programme, in addition to the heirloom available with the individual households, additional millets and pulses seed varieties had been supplied to the beneficiaries. Training on preparation of organic manure (*Jibamruta*, *bijamruta*, *panchagabya*, general compost, vermin compost, *nimashtra*, *brhmashtra*) and on the field demonstration had been provided to the women farmers. Women were encouraged to practice mixed farming in an effort to revive the indigenous mixed and bio-diverse farming system with regular follow up.

**NIRMAN** Liaison Office,  
S-3/751 –Niladri Vihar, P.O.-Sailashree Vihar,  
Bhubaneswar -751021, Odisha, India



Since NIRMAN's intervention there was an increase in crop seed diversity at Pagarpadi village, for instance, the millet diversity has increased from 06 to 26 varieties; oil seeds from 02 to 07 varieties; legumes/pulses from 12 to 39 varieties; paddy from 02 to 05 strains. In addition to the seed support provided by NIRMAN, the other major contributors of increase in seed diversity includes, traditional seed exchange practices and bio-diversity festival, regional and state level workshops and festivals facilitated by NIRMAN and other seed exchange networks. The average household income has increased by 70%, for instance on an average household sold pulses alone worth INR 14,000/- in the year 2016. The food security of average household also increased since our intervention, the food scarcity per average household before our intervention was 45 days, but decreased to 25 days in 2013, within a year of our intervention. The crop diversity has increased; thereby food security of the Pagarpadi village is stabilized in four years by 2016. Despite the persistent drought conditions prevailing in India and Odisha in general and Kandhamal in particular, neither the millet crop nor the food security of Pagarpadi had been affected. The unseasonal showers affected the harvest of pulses; however the deficit in supply of pulses worked in favor of the local farmers, who reaped more profits from sale of the pulses this year.

It is necessary to mention here that the food security of Pagarpadi village remain unaffected during natural calamities of the past and present, for instance the local food security has remained unaffected during the previous Phailin cyclone disaster and the present prevailing drought conditions. Observations like these suggest that millet has tremendous potential to withstand natural calamities and secure the food security of local communities. Hence, it may not be wrong to suggest and promote millets as the crop to fight potential food scarcity caused due to



human induced climate change and curb food insecurity, however, more research should be conducted in this direction to confirm this with empirical data and evidences.