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For a world without hunger



SUSTAINABLE INTEGRATED FARMING SYSTEMS

Promoting holistic agriculture

Introduction

India is currently in the throes of an agrarian crisis. Our rich agricultural crop diversity and associated knowledge is slowly getting wiped out and is being replaced by a handful of 'high yielding' and 'improved' crop varieties. Indiscriminate use of agro-chemicals has led to the death of soil microflora and fauna and has poisoned our food and ecosystem. Our ground water aquifers are declining fast. The small and marginal farmers, who often own less than an acre of land are getting marginalized in the new economic order. They have neither resources to invest, nor can they earn any significant amount of profit. Land and water crises added to climatic variations have made farming unprofitable. Sustainable Integrated Farming System (SIFS), tries to address the problem at the farmer's front.

Approach

Based on a systems approach, integrated farming is an improved version of mixed cropping, which tries to imitate nature's principles, where not only crops but, varied types of plants, trees, animals, bird, fish and other aquatic flora and fauna are utilized for production. These are combined in such a way and proportion that each element helps the other and the waste of one is recycled as resource for the other. Following this principle, SIFS focuses on following processes:

- Capacity building of farmers through Farmer Field School (FFS) on farm designing and technical skills.
- Integrating various techniques like soil and water conservation, rainwater harvesting, cropping sequence management and multitier arrangement for better man-



Channel inside a rice field for rice-vegetable-fish-duck farming system

agement of space and better utilization of time by increasing cropping intensity and decreasing fallow period.

- Improving management practices by forming farmers cooperatives, aggregation of farm produce, value addition, processing, packaging, certification and marketing of farm produce through Common Facility Centres (CFC).
- Community monitoring for tracking progress.

Result Areas

- At the farm level, overall production of food and fodder, income and nutrition, is enhanced and diversified both in terms of quantity and quality, incidence of risk is reduced, self-sufficiency increases and the system becomes energy efficient as a whole.

- Following organic farming techniques, farmers recycle and compost farm waste, practice crop rotation in combination with legumes and green manures and produce botanical sprays for pest and disease management, thus reducing cost of external inputs by a large extent.
- In the process, the farmers become innovative, self reliant, analytical and technologically sound to assess their own resources, strengths and stresses.
- Local economy is strengthened through farmers' cooperatives for value chain improvement. This also enhances market access for the small farmers and enables them to climb up the value chain.
- As the planning capacity and cohesion among the farmers are increased, they become efficient in accessing mainstream funds for creating productive assets in the village.



SIFS farm with biogas, cowshed linked with composting unit

50% of the cash need is coming by selling farm products.

- The programme has also mobilized funds worth Euros 300,000 from Government programmes for improving farming infrastructure and assets.

Story of Renupada Bagdi

Renupada's life, having to support a family of five, was as bleak as that of any other share cropper. He share-cropped in two acres of land and gave away half of his farm produce to the land lord in return for his labour. In 2012, Renupada adopted the techniques of integrated farming. He sowed single stick paddy in the rainy season, then tried grass pea in 1/3rd acre as relay crop for fodder. In his 1/6th acre of land, which was once mono-cropped, he now cultivates paddy and black gram as well as soya bean on the field dyke in the rainy season. In winter, he grows lentils, linseed and mustard as mixed crops. His nutrition garden, is now productive throughout the year, with no cash investment. He cultivates 10 to 14 varieties of crops every season, giving his family a much richer diet. His livestock and birds have grown to two cows, two bullocks, one calf, two goats, one sheep and fifteen ducks. The feed for these comes from the straw, mustard cakes and agro-waste from his own production. He collects every drop of the dung/droppings and recycles through vermi compost and biogas plant. His approach of looking at the farm production as a holistic system with multiple resources, and carefully linking them through biomass recycling, has resulted in food and nutrition security and sustained farm production. His annual profit is now 62,222 INR (Euros 890 approximately) and he saves nineteen types of vegetable seeds for future use.



Market shed managed by farmers for selling farm produce

Main achievements

- The programme has developed 150 farmer trainers, who are training other farmers on SIFS.
- 10,000 families (area covering 5500 ha), converted 650 ha of barren fallow land to cultivable land, 850 ha of single cropped land to double cropping.
- During the baseline, 77% of the farms had only one crop in the cropland and homestead land was hardly used. Now, about 49% grow two crops, 33% grow three crops and 7% grow more than three crops. About 75% farms are producing five to seven types of vegetables with improved dietary diversity.
- 40% farmers in rainy season are getting 52 to 68% of their required input by recycling wastes.
- About 69% farmers on an average show increased farm productivity compared to the baseline.
- 88% farmers recorded increased net income and 52% have doubled their net income. For all the farms, about

Partners in South Asia

India: Development Research Communication and Service Centre, Pravah, Centre for World Solidarity, Society for Promotion of Watershed development, Vaagdhara

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