

Small farmers, Large field: An innovative model towards doubling farmers' income in Eastern India

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As doubling farmers' income has become the National agenda in India, therefore strategic engagement with small and marginal farmers has been prioritized. This paper illustrates the concept of an innovative model 'Small Farmers, Large Field (SFLF)', that has manifold benefits. The paper highlights the learnings from the SFLF pilot project in Odisha, an eastern India State. The model was piloted by International Rice Research Institute (IRRI) in two villages (the first village having male farmers only and the second village having all women farmers as SFLF members) of Odisha. The basics of the model are that smallholders join and decide to grow a crop of one or two varieties, synchronize all the agricultural operations (seed to seed) as a group/community and gain higher bargaining power while dealing with service providers, dealers, and paddy traders/millers. The overall findings from the project are- reduced cost of production of paddy, increased grain yield, comparatively higher price over prevailed market price, enhanced farmers' gross income and net profit.

Keywords: Farmer income, Innovative model, SFLF, Small farmer

IN the past few years, 'Small Farmers, Large Field (SFLF)' schemes have received significant attention in Vietnam, Thailand, etc. In Vietnam, the area under the SFLF model skyrocketed in Vietnam from 8 ha in 2011 to 196,000 ha in 2015, with an increase in farmers' profit of USD 110-180 per ha. This model introduces scale efficiency by developing a model of community farming which pools small and marginal farmers together; enabling them with efficient, cost-effective input use, technical knowledge and infrastructural facilities that will help overcome the constraints faced by small farmers in accessing inputs, formal credit system, extension, and marketing. Through systematic, planned and synchronized agricultural practices, farmers can utilize united-scale to procure inputs at a lower price, and gain more bargaining power for their produce. Raising productivity and profitability of small farmers' require timely access

to quality seeds, fertilizer markets and agricultural machinery, technology sensitization, irrigation systems, post-harvest storage and marketing strategies. When small things join together, they become more effective and bigger in many aspects. The seed-to-seed marketing schematic framework of Vietnam model is provided in Fig. 1. Agriculture will be profitable and attractive only if farmers are empowered and their produces are linked to markets or a value chain. Connecting the 'community farmers' directly to input and service markets, millers/organized retailers or such super/global markets has the potential of shortening the value chain, translating into higher farm incomes. At the same time, these market actors can reduce their transaction costs considerably by sourcing quality and uniform product from a bigger unit rather than from very heterogeneous small farming community producing low graded rice with mixing of

several varieties and assure demand of inputs/ supply of produce from community farms. This enables lowering the input/service cost as well as fetching higher sale prices. The model of community farming would not only ensure better access of small farmers to quality services but will also mobilize and build their collective capacity to leverage their production and marketing strength. Moreover, the synchronized agricultural operation and use of 1-2 varieties would open the scope for second-third crop. A successful scale up of this model in the medium and long term has the potential of facilitating effective implementation of government policies, thereby improving livelihood of millions of small farmers.

Customizing and piloting SFLF model in Odisha

International Rice Research Institute (IRRI) in support of its ongoing projects like Cereal Systems

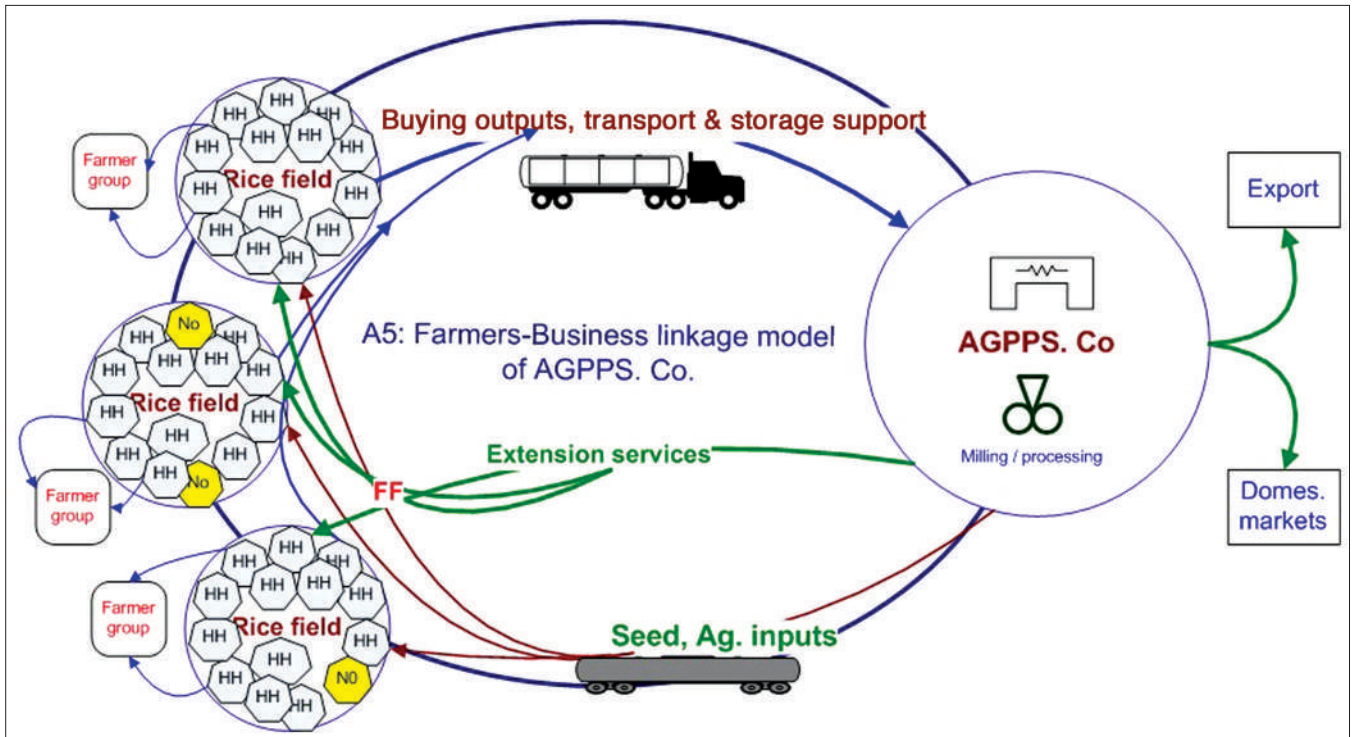


Fig. 1. The structure of SFLF model

Initiative for South Asia (CSISA) and Stress-Tolerant Rice for Africa and South Asia (STRASA) piloted SFLF customized model at Taraboisan and Khanijpur village in Odisha. It was possible after several round of discussion with farmers on the concept of SFLF, resource mapping and feasibility analysis (Fig. 2). The project also engaged a local NGO, IFFCO, Rice Miller, SPO (Seed Producer Organisation), etc., for better facilitation and had joint visits during planning and implementation stage of project piloting (Fig. 3). SFLF member farmers formed a committee to take the role of facilitator between farmers, implementing agencies and managed logistics and financial requirements.

The motivation of SFLF model are: 1) Doubling farmers' income by 2022, 2) Large composition of marginal and small farmers (Odisha ~ 94% and India ~ 85%), 3) Increasing cropping intensity as the present CI of less than 200% (Odisha 167% and India 142%),

4) Increase the real income¹ of farmers (as per NCF, agricultural progress by real income of farmers and not by gross production of agricultural commodities) by restructuring of agriculture process/policy, 5) SFLF model of Vietnam showcase success in collective production model, where fields are with one or more owner, but have the same production procedure and the same product selling plan, and 6) NITI Aayog's advocacy for collective action to minimise the scale disadvantages faced by small and marginal farmers and aggregating farmers can help achieve economies of scale.

The standard criteria to develop SFLF on a multi-stakeholder partnership are: 1) Horizontal coordination of small rice farmers - Smallholders are reorganized and integrated in groups to increase their power (in input and output markets/tech application/mechanization/premium quality rice), and 2) Vertical coordination of farmers with input dealers (seed, fertilizers, pesticide,

and custom service providers) at one end and output market (millers and exporters) at the other end.

The action plan was prepared well in advance to launch the project and based on situation prior to any agricultural operation. The approach of this piloting was: 1) Establishing relationship with farmers (mostly youth), 2) Sharing the concept of SFLF and clearing the doubts of possible risks, 3) Properly studying farmers' preference, 4) Engagement of local supporting agencies, 5) Creation of village SFLF committee for regular management and review, 6) Identification of member farmers and land, 7) Tentative scheduling of agricultural activities, 8) Identification of potential stakeholders (agri. input/output) and linkages, 9) Deciding 1-2 varieties as per suitability of landscape and farmers' choice and sourcing seed from one reputed source, 10) Synchronization of agricultural activities (seed to seed, soil testing, land preparation, nursery raising in group, transplanting, nutrient

¹The average monthly income per capita from farming increased from ₹ 1,060 in 2003 to ₹ 3,844 in 2013, according to the report, 'Situational Assessment of Agricultural Households' by the NSSO, the compounded annual income growth rate was 13.7%. To double the income of farmers by 2022, in nominal (numerical) terms—which do not take inflation into account—would require a 15% compounded income growth rate, which is a marginal increase over the achieved increase from 2003 to 2013. However, to increase the income in real terms, would imply restructuring agriculture processes and policy interventions.



Fig. 2. Sensitization of farmers on SFLF model



Fig. 3. Joint visit of farmers, implementing agency and stakeholders to SFLF site

management, crop protection, harvesting and marketing).

The project was piloted in Taraboisan in both the *kharif* (wet) and *rabi* (dry) seasons during 2016-18. After having exposure visit to the project site and discussion with farmers from Taraboisan and Khanijpur villages, where all the member farmers were women (mostly member of women SHGs) piloted the same SFLF model with some customization (variety type, type of crop establishment, harvesting, etc.) during 2017-18.

Output and outcome

Farmers observed the economic benefits at all the stages of agriculture production cycle. For example, the service provider readily agreed to charge USD 31 per ha vis-à-vis the USD 39 per ha paid by the SFLF farmers in the previous season. The farmers also spent less for land preparation, crop establishment, and herbicide and pesticide purchase. Price received by SFLF farmers for their paddy was USD 16 per tonne higher than the prevailing market price at that time. Based on the data collected from each participating farmer at the end of the season, the average per ha profit was estimated to be USD 390 in the 2015-16 dry season. Again, the SFLF resource-

poor members got rid of credit problem by obtaining interest-free credit from each other under group solidarity rather than from microfinance loans at an average 26% interest rate. The project enable to reduce the cost of production by 10%, paddy yield increased by 27%, paddy sold at 10% more price over prevailing market price, farmers' gross income raised by 41%, and net return increased by 105%.

Besides economic gain, most importantly farmers could save about 30 days/season by doing a group activities and not spending time individually going to market for buying and selling agri inputs and outputs. The time they save helped them for other income generating activities and spent quality life with family and relatives. With increased income, resource-poor smallholder farmers could afford good health and education. With better education, poverty and food insecurity was hugely reduced and ensure a prosperous society. Quality product was made available with volume. Due to synchronized agricultural activities and vacant field at a time with retaining residual moisture or limited irrigation facility, the model opened scope for a second-third crop, resulted in higher cropping intensity with diversified food choices and

address the major concern of rice-fallow. Due to layering of resource conserved, sustainable intensification (SI) technologies and Stress Tolerant Rice Varieties (STRVs) in the model, the system enhances environmental footprint.

WAY FORWARD

The project shows that there is a huge scope for horizontal and vertical expansion of the model. The expansion of the model is not automatic. Gaining trust of initial facilitation and capacity building of the farmers is a must before streamlining. For this, engagement of technical support, Institutions, and knowledge organisations with other potential partners is indispensable. Customisation of the model based on landscape, infrastructure availability, farmers' preference and market situation may be done. The model is fit for any crop (cereals/vegetables/pulses/oilseeds/etc.). A sustainable farming system can be planned with a suitable cropping system and livestock development for smallholders' upliftment and conservation of biodiversity.

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Know Krishi Unnati Yojana

The *Krishi Unnati Yojana*, a central sector scheme, is envisaged as umbrella programme for focusing on food security, by merging schemes on Soil-health Card, Integrated Scheme on Agricultural Co-operation and Agricultural Marketing, National Mission on Agriculture Extension, Horticulture Development, Price Stabilization Fund, National Mission on Sustainable Agriculture and other programmes.