

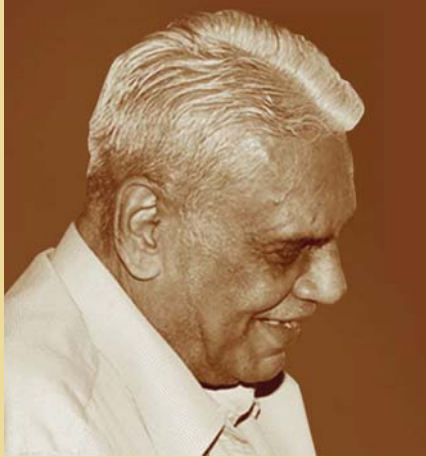
Magazine on Low External Input Sustainable Agriculture



# LEIS INDIA A



**Small holder  
farm enterprises**



**Dr. R Dwarakinath  
(1926-2018)**

Dr. R Dwarakinath, one of the pioneers of the country's agricultural extension system and the founder Chair person of AMEF, passed away on 29th September 2018.

Dr. Dwarakinath, who relentlessly strived for promoting sustainable agriculture, was known for his vision, clarity of purpose, deep commitment for farmer's welfare and forceful suggestions for simple and doable action. With an enviable academic background, he handled illustrious positions. He was bestowed with civilian honors by the State of Karnataka. He was considered as *Bhisma Pitamaha* of agricultural development and extension.

The most distinctive feature of his professional background was not resting on his laurels, but being incredibly successful in bringing his vision operationalised with farming communities. This he did consistently in every position he held - as Director of Agriculture, Vice Chancellor, Chairperson and member of several policy making bodies and as Chairman, AME Foundation.

He was an excellent communicator too. His deep sense of commitment for farmer centric agricultural development reflected in his writings which had deep clarity of purpose, clear sense of direction, profound vision, and simple practical solutions. His contributions on dry land farming are pragmatic and thought provoking. Besides being an excellent orator and communicator, a popular teacher and a farmer's friend, he was simple at heart and relentless in his commitment to help the farmers.

# CONTENTS

Vol. 20 no. 3, September 2018

- 4 Editorial
- 6 Backyard Poultry  
*A success story of a tribal start-up*  
Kanna K Siripurapu, Aneetha Kanukolanu,  
Sabyasachi Das and Chandrasekhar Nemani
- 10 The saga of sustainable Wadi  
Ganga Ankad
- 13 Mushroom enterprise  
*A collective effort towards empowerment*  
S Maurya, P R Kumar, R S Pan, A K Singh,  
Bikash Das and B P Bhatt
- 16 Inch of land with bunch of enterprises  
P Anithakumari, Merin Babu and S Indhuja
- 21 Diverse farming  
*Need of the hour for small farmers*  
M N Kulkarni and T Suresh
- 24 New Books
- 25 Sources
- 26 Farmer Diary  
*Ecological farming is the way forward*
- 27 Sustainability through diversified farming  
Amandeep Singh and Gurpreet Kour
- 30 In the news
- 32 Group Enterprises  
*A way to enhance small farmer livelihood*  
H R Mallesh and T Parthasarathy



# Inch of land with bunch of enterprises

**P Anithakumari, Merin Babu and S Indhuja**

Small is beautiful and productive when it is diversified and nurtured to meet the nutritional and economic needs of the family. Small holdings challenge the farm families to innovate, to experiment, to recycle and reduce the cultivation costs. A small diversified homestead farm, successfully managed by a woman farmer is truly inspiring.

*Indira grows pepper vine in coconut and arecanut plantations*



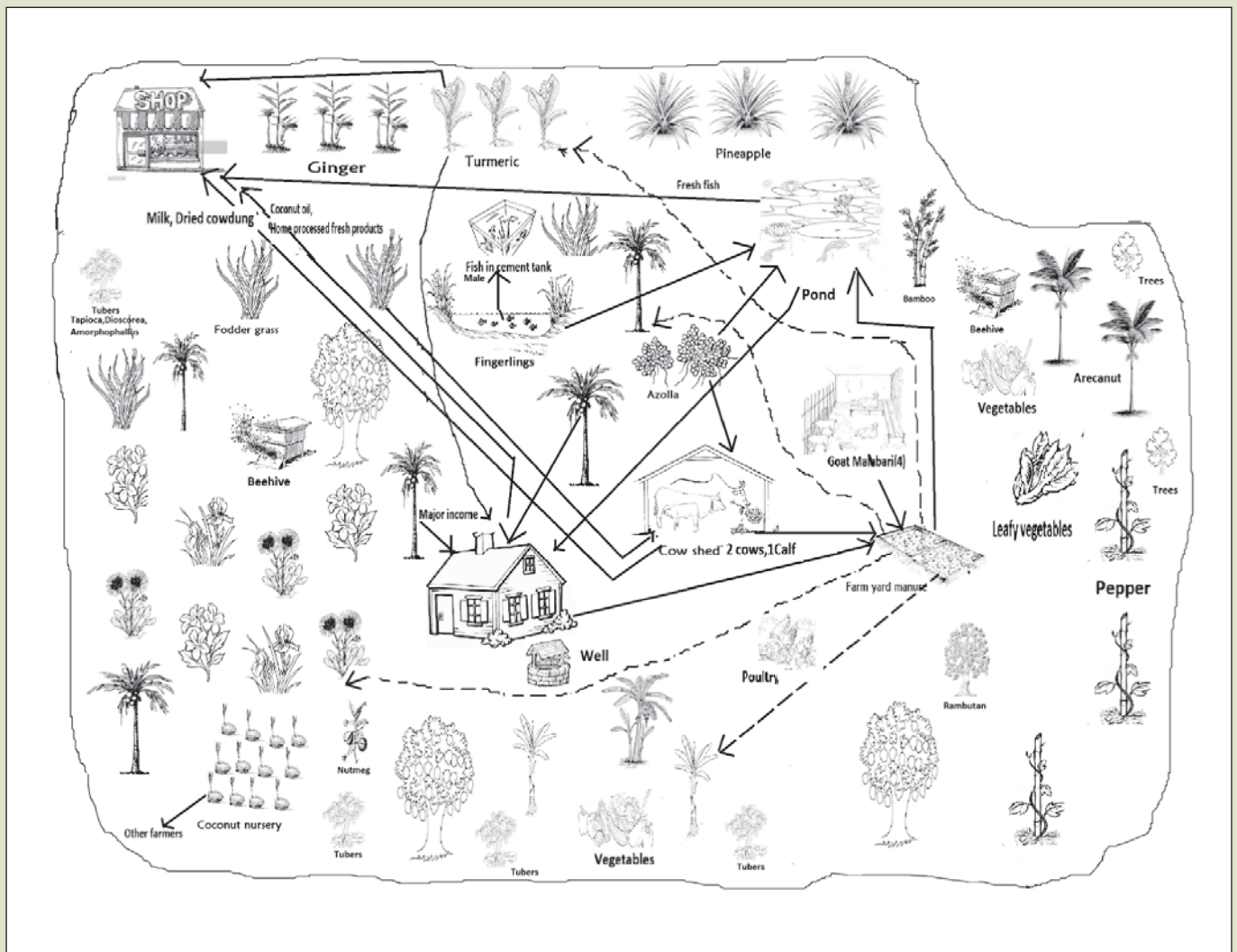
**D**oubling farm income by 2020 is one of the most targeted goals for agriculture research and development sector. All India data reveals that more than 80% of the farmers in India are small and marginal. It is also an indication, that major portion of the agriculture production in India are from these small farms. The ‘success mantra’ of the small farms of Kerala state with an average land holding size of 0.2 hectare is the multiple diversity models achieved through innovations of the farming community evolved over time.

Indian Council of Agricultural Research- Central Plantation Crops Research Institute (ICAR-CPCRI) has been implementing several outreach and participatory extension research programme among farming community. Under its ‘Farmers FIRST’ programme



*Returns from livestock adds to the family income*

**Fig.1. Pictorial representation of the small farm for Dietary diversity and multiple income**



### Box 1: Small and diversified homestead farms- Some salient features

- The land holding size of small farms ranged from 0.2 to 0.4 hectare. The multiple components were blended for the maximum utilization of resources including the mobility and availability of time of farm family members.
- Cafeteria of crops such as coconut, fruit crops, fodder, tubers, vegetables, spices etc., and inclusion of diversified farm enterprises of varying unit sizes of livestock, small ruminants, poultry and backyard ponds, enabled resource recycling and are managed mostly with family labour.
- Farming practices are adopted in rainfed conditions. Soil and water conservation measures such as opening of coconut basins before monsoons, mulching with farm residues and recycling of animal and farm waste like cowdung, urine and dry leaves, are adopted.
- The role of family members enhanced the efficiency through better time management, mobility optimization, networking with society for marketing farm produce and for obtaining critical inputs.
- Involvement and participation of farmers (family) was the key point of sustainability in all the small farms. Harvesting and marketing is done on a daily basis so that the 'food mile' is zero.
- The technology options included carefully chosen traditional knowledge and skills like usage of botanical pesticides and organic manure for vegetables, tubers, banana, coconut and livestock.
- The scale and size of each component in the farm, was found to be decided by the farm family, to manage the output, to distribute income and sustain farming successfully through maximum use/ recycling of internal inputs from other enterprises.
- The income sources were distributed in small farms to get daily income (egg, milk, sale of home processed products, bush jasmine etc), fixed interval income (coconut harvest in once in 45 days) and seasonal income from crops like nutmeg, pepper and bonus income from timber trees, sale of animals etc.

(FFP), case studies of small farmers in Pathiyoor panchayath, Alappuzha district were documented. The salient characteristics of small farms were found to be blending diversity of innovations in crops and enterprises.(see Box 1)

### Diversified homestead farms

Homestead farming in Kerala is a time tested model, matured through generations and experiential learning.

'*Purayida Krishi*' in Malayalam language, literally means 'farming in the space around home for family'. Hence it could be termed as 'small farms by the farm family for the farm family' sticking to the natural and ecological norms.

Mrs. Indira, Kandathiltharayil, Pathiyoor East, Alappuzha is an enterprising model woman farmer of the Farmer FIRST program (FFP) embracing enterprise diversity in integrated farming system (IFS). The small farm is of 0.28 ha area and managed by Mrs. Indira, her husband and son. The farm is small and has two milch animals

and one calf, five goats of Malabari breed, 80 poultry birds of kadaknath and local breeds, fishpond of 600 m<sup>2</sup> area, along with coconut based cropping system. Also there are timber trees on borders, 73 pepper vines trailed on the trees, arecanut and few coconut palms, *seemakonna* (*Glyricidia Sp.*)/*vatta* (*Macaranga peltata*) which also served as green manure crops.

*Indira gets premium price for farm fresh products*





*Azolla grown on farm is used as supplemental feed to livestock*

Mr. Midhun, her son is an engineering graduate and has set an example with his contribution to this small farm. He started fish and fingerlings farming in three cement tanks of 7 X 4X 1 m size, besides the homestead pond. He is happy that the homestead farm gives luxuries like pure and plenty air, cool micro climate and fresh foods with 'zero food mile'.

### Resource recycling

About 68 species of plants and breeds have been documented in this small farm. The traditional wisdom of ecological engineering in homesteads with floral plants and intercrops is reflected in the natural presence of two stingless bee colonies in the plot. Resource recycling has reduced use of external inputs up to 60 percent. The fodder and natural grasses are fed to livestock while farm yard manure and urine are used for the crops. Azolla,

harvested once in three days, is used as feed for poultry, goat, fish and livestock. It is also applied to vegetable crops, occasionally. Green manure crops provide micro and macro nutrients. The kitchen wastes and ash are applied to crops. Coconut residues serve as mulching material and enriches the soil.

### Reaping multiple benefits

The family is reaping multiple benefits through their homestead gardens. The incidence of pests and diseases are very low compared to monocropped plots. Farm produces traditional breeds and crops and fetch premium price of 20-30 percent more compared to similar marketed products. Farm products are sold through an outlet on the farm itself. Milk is supplied to milk farmers' cooperative society. Milk and eggs of local breeds fetch higher price. Home based value addition products like

curd, buttermilk provide regular daily income to the tune of Rs.200 to 300. Income from coconuts is received once in two months. Around 4.2 lakh rupees of income is earned annually by the family.

Diverse homestead farm also provides healthy fresh foods to the household. Most of the home food needs are met from the homestead itself. Sesamum and horsegram are grown seasonally. Besides these, diverse foods like roots and tubers (amorphophallus, dioscorea, colocasia, yam, cassava), green leafy vegetables (moringa, amaranthus, traditional miscellaneous leaves), fruits (banana, pineapple, mango, jack, sapotta, rambutan), vegetables, fresh water fish, milk and milk products, eggs, etc., are providing a healthy nutrition to the family. Indira says, *“Our farm is the ‘akshaya pathram’ of fresh nutrition for a healthy family and green income with plenty of happiness and love from the living beings in the farm.”* *“The most important experience from this integrated farm is the risk alleviation during price fluctuation and climate change”*, says her husband Mr. Ravi.

Indira besides getting food and steady income from her farm opines that she is also being respected and has gained

recognition from family members and her community. She was also recognized for setting an emulative model of integrated farming system, by Krishibhavan. She was also invited to share her farming model which has the feasibility for doubling farm income in a National level workshop organized at NAARM, Hyderabad - a proud moment for her as a women farmer.

*Mrs. Indira can be contacted at 9947722454.*

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*Fingerlings produced in fish tank in the farm*

