July 2012

Development Matters

Monthly Development update from DHAN Collective

Initiative

Farmers New Initiative: Thottam Super Market

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Monthly Development update from DHAN Collective
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Appropriate price for the produce remains a distant dream for farmers, because of market intermediaries, post production handling and lack of support by the government. Thottam Super Market is an initiative by Farmers themselves to break this trend.

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From the Editors' Desk

Dear Readers,

Greetings!

Climate change will have a profound impact on fresh water availability for irrigation and domestic purposes. The article by A.Gurunathan comes out with possible water sector approaches to combat this issue. Analysis of livelihood status of tank farmers in chittoor region, interventions done and plan for advancement is highlighted in the article by M.Kirankumar. The grassroots story of the woman Gayathri, explains how she used the training given by the Kalanjiam federation to come up in life. Jasmine grown in Madurai has all the potential of getting the GI patent and the reasons for the same is discussed in the article " Fragrance of Madurai" . The farmers new initiative of starting a super market for vegetables and fruits, to mitigate the problem of middlemen is also captured in this issue. Ensuring food for all is the focus of any government and scope of proposed National Food Security bill is analyzed in this issue. Know your heritage speaks about Devipattinam, near Rameswaram popular for its Navagraha temple.

The readers are welcome to give their suggestions and feedbacks on the articles featured in the development matters. They can send their mails to dhancdc@dhan.org

Happy reading!

Contents

Water Sector Approaches to Combat Climate Change

A.Gurunathan *

1.0 Climate Change and Impacts on water

Every day, the humanity needs more water across the globe to produce food to meet the demands of about one billion people added every year. One of the very important aspects of the impacts of climate change relates to the equity implications of changes that have been happening as well as likely to happen in the future. And given the status of economic strength, institutional capacities and required capacities of the agrarian countries like India, the loss of livelihoods and opportunities to maintain even subsistence levels of existence might occur. Increase in temperature, changes in rainfall pattern, distribution and intensity is already observed which pose a serious threat to food security, livelihoods and shelter.

Climate change holds profound implications for irrigation and drainage in India. It alerts snow melt and spring flow inducing a corresponding shift in planting calendars as farmers try to avoid late season droughts. Increased evapotranspiration losses from lakes and reservoirs due to increased temperature, greater watershed erosion and consequent reservoir sedimentation due to intense precipitation and increased frequency of more intense storms which may force to increase the flood storage capacity in reservoirs or even redesigning spillways are the other major impacts. Water stored as fresh groundwater in coastal aquifers can also be contaminated by saline water intrusion in response to higher sea levels.

On balance, changes in water supplies are likely to be more pronounced and have greater impacts on irrigated crop production than increases in evapo transpiration. Reducing demand through more efficient irrigation technology has significant potential to help farmers deal with reduced supplies. Micro irrigation can be applied on a wide range of scales and would be an important adaptation practice.

With respect to drainage, the strongest impact is likely to be the need for increased drainage provision, particularly in lowland and deltaic regions. Also, floods bring epidemics in their aftermath. Two ways to overcome drainage impact are to provide increased drainage or change to flood-resistant crop or new varieties. Encroachments on flood plains also need to be reassessed and regulated.

Droughts have a direct negative effect on rain-fed agricultural production, including live stock production in addition to their impact on water supplies for domestic, industrial and irrigation purposes. In dry environments, the risk of wildfires will increase affecting livestock grazing, timber based livelihoods and watersheds supplying drinking water to urban areas, in addition to direct threat to human lives and structures. Catastrophic land slides are also possible in view of expected higher intensity rainfall. Many eco systems are stressed by land use changes due to diversion of water from rivers and widespread release of industrial contaminants. Alterations in temperature and hydrologic regimes resulting from climate change will add to these stresses and will likely lead to additional loss or displacement of habitat, loss of bio-diversity, extinction of species and increased desertification.

***A.Gurunathan,** Programme Leader, DHAN Foundation

2.0 Tamil Nadu State - Water Resources

Though water is available in the universe in huge quantity in the order of 1400 x 106 km3, only 3% of the waters in the universe is fresh water. Tamil Nadu accounts for 4 per cent of the land area and 6 per cent of the population, but only 3 per cent of the water resources of the country. Most of Tamil Nadu is located in the rain shadow region of the Western Ghats and hence receives limited rainfall from the south-west monsoon.

2.1 Water Balance

The Water Resources Organisation prepared a State Framework Water Resource Plan of Tamil Nadu. The annual water potential of the State including surface and groundwater is assessed as 46,540 MCM (1643 TMC) while the estimated demand is 54,395 MCM (1921 TMC) in 2001 which is likely to go up to 57,725 MCM in 20502. The various sectors are.

- Domestic use (urban and rural) is projected to go up from 4 per cent to 6 per cent due to increase in population and due to urbanisation. The domestic requirement would increase by 55.72 percent.
- Agriculture use will remain stagnant or may even decrease due to progressive urbanisation.
- The share of industry may not change much, but in absolute terms the increase will be about 27.7 per cent.
- Provision of 1600 MCM in 2050 would be made for minimum flow in rivers for ecological purpose, which is a new category for water resource planning.

2.2 Eco-System based Watershed Classification

The land is traditionally classified following the ancient land classification principles as Kurinji, Mullai, Marudham,Neithal and Palai. Considering the above said classification of lands in Tamilnadu, a Research Team from DHAN Foundation undertook a strenuous exercise of classifying all micro watersheds spread over 385 development blocks in the State, based on the watershed boundary from the Watershed Atlas and on the land use pattern in each block. After grouping the watersheds based on 500 ha treatment area, the total watersheds in each eco-system have been distributed among the cross cutting themes as shown in Table 1.

Table 1. Eco-System based Watershed Classification

Land Classification	Characteristics	Total Number of Water Sheds
Kurinji	Hilly and Hillside lands	3,370
Mullai	Forest, interface rainfed agricultural, barren and wastelands	4,450
Marudam	Plains, cultivated wet and rainfed lands	9,040
Neithal	Coastal lands	1,930
Palai	Desert lands	450
	Total	**19,240**

The futuristic eco-system based watershed development with a focus on water security, integrated with local issues could be developed, based on the figures shown above. The State's immediate effort may well be on development of a unique plan of saturating all micro watersheds through long term (say 20 years) context based approach. This would be possible only when People's participation and implementation of watershed development take place as a "Movement" in place of contemporary target oriented, technology driven and top-down approach by the government agencies.

3.0 Perspective Plan for Integrated Micro Watershed Development

The perspective plan for micro watershed development envisages the conservation of water and land resources in a holistic manner. The research team termed the eco-system based watersheds, which are to be developed, as New Generation Watersheds. The treatment of these watersheds would ensure water security.

Relevance of New Generation Watersheds

- No deviation/ minimum deviation between ideas and action while implementing watershed programmes
- In order to have Sustainability and long Shelf Life, each watershed would require at least 7-10 years instead of the present 5 years constant term for development.
- When the period of implementation extends upto 7-10 years, the additional resources needed can be met by having a judicious mix of grants and loans; Private and Public finance (eg.) Rural Infrastructure Development Fund
- New Generation Watersheds need to be driven more by development focus rather than technology alone.

The New Generation Watersheds must look into integration of Tanks, Ponds, Streams and Springs (TAPSS) because TAPSS are 'Living Eco-system' situated within the micro watershed. Many of them are in a dilapidated condition. It therefore provides ample scope for undertaking tank based micro-watershed development at cascade/sub-basin level. Development or rehabilitation of tanks, ponds and other water bodies existing in the micro watersheds will provide immediate benefit to the people and livestock and in the long run, enhance the surface and groundwater potential which is the prime objective of any watershed development programme.

Finally, the watershed should integrate all developmental issues of the concerned watershed. Each micro watershed must be developed by the people formed into a watershed association instead of the present guidelines driven myopic watershed committee having selective representations within the watershed. Through incorporation of the 'missing links' in conventional watershed development, the New Generation Watershed might address issues like groundwater disaster and water rights.

The following are some of the priority areas for consideration:

a) Water Scarcity:. Tamil Nadu is a chronically water starved state. Climate change is likely to exacerbate this situation. Suggested measures are steps to both manage demand for water and to enhance supply without waiting for evidence of change of climate and precise estimate of its magnitude, since action will be beneficial even in the absence of climate change.

b) Knowledge base and analytic capacity is another important priority to expand the knowledge base on water resources, climate change exposure and impacts. Application of GIS and remote sensing technologies to the assessment process can enhance the extent of coverage considerably.

c) Water-Saving technology: Adaptation of water-saving technology like Micro irrigation, converting open, earthen channels to buried pipelines, adding control gate to free flowing systems and technologies for reducing and reusing water for domestic consumptions can be focused. We need to look at the contribution of International Commission on Irrigation and Drainage (ICID) on a list of ten strongly effective technologies for increasing agricultural production with limited amount of water (www.icid.org)

d) Management and Governance Reforms: Management and governance of water distribution including transfers of irrigation system management responsibility from the state to farmers, private sector involvement in operating municipal water supply systems and, establishing reliable system of water rights etc., is the need of the hour.

e) Supply Augmentation: Treating urban waste water, the use of constructed wetlands for treating waste water from smaller communities in warmer climates, groundwater recharge through innumerable techniques available and used currently, must be up scaled up and rejuvenated.

f) Multiple uses of water: Integrated use of water for irrigated crops, livestock, poultry and aqua-culture as well as domestic needs and environmental needs can considerably save water and increase productivity of water.

g) Insurance Schemes: There is scope for insurance programs to smoothen the risks associated with climate variability. Primary targets would be risks relating to crop failure, livestock deaths and floods.

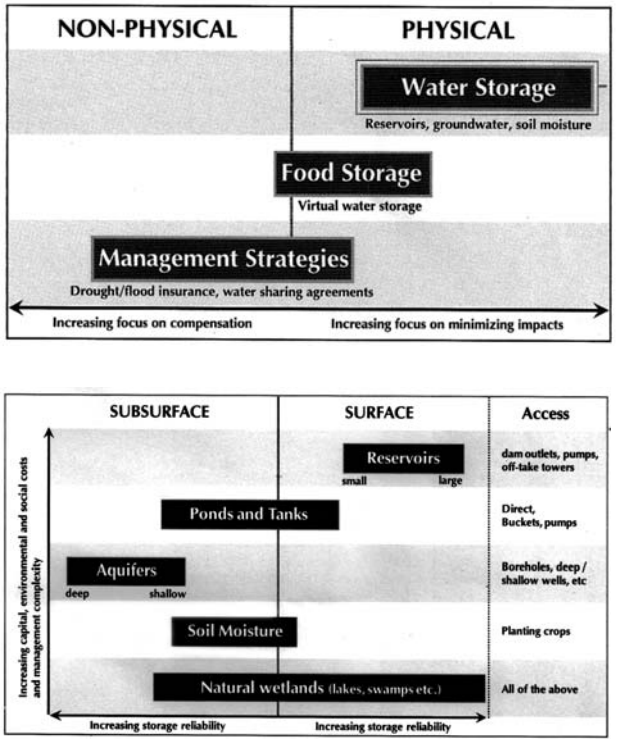
h) Awareness: It is important to raise awareness among policy makers, opinion leaders and the general public of the mechanisms that drive the problem and options available both to mitigate it and to adapt it at the local level. Policy roundtable, seminars, workshops, news features are all effective ways of doing this. Climate change can also be included in school curricula at all levels.

4.0 Climate Change : Priority areas for Coping and Adaptation

4.1 Augmenting Freshwater bodies

In Tamil Nadu state, there are 39000 minor irrigation tanks, innumerable local ponds drinking water Oorani and percolation tanks. The climate adaptation action plan should focus on augmenting storage capacities and strengthening hydrologic linkages between fresh water bodies in all 17 river basins. Priority must be given to tank intensive districts and coastal districts which bear the brunt of water scarcity and salinization in view of sea water intrusion. As suggested by International Water Management Institute, Colombo in their water policy brief , following are the options for adaptation and water storage options.

Fig 1: Options for Adaptation



Source: Water figures Issue 2 – 2009, IWMI

Water storage focus and contextualisation

Sl. No.	Eco-systems/ Context	Adaptation Focus	Rehabilitation/Renovation/Conservation of Water bodies such as…
1.	Rural	Water Security Food security	✍ Minor irrigation tanks in cascades ✍ Percolation/Cattle Ponds ✍ Recycling Waste Water at Panchayat Level ✍ Farm Ponds in catchment /rainfed lands ✍ Artificial Recharge of potential aquifers through Check dams/anicuts
2.	Coastal	Preventing Desertification & Sea water intursion Clean Drinking Water Access Safe drinking water & Household level	✍ Enhancing storage capacity of irrigation tanks in coastal belt and diverting water going waste in to sea after giving care to biological needs ✍ Constructing Farm Ponds/ Kondams ✍ Drinking Water Oorani to be deepened in all costal villages ✍ Bio-sand filters at Household ✍ Sanitation improvement

Sl. No.	Eco-systems/ Context	Adaptation Focus	Rehabilitation/Renovation/Conservation of Water bodies such as…
3.	Hilly terrains	Afforestation Preventing Erosion & Sedimentation Preventing Wild fires	✍ Checkdam/Gabions/ terraces and staggered trenches ✍ Tree Plantation
4.	Urban/Town Area	Preventing Floods Improving Drainage Protecting Waterbodies Penalising Water Pollution	✍ Deepening Waterbodies after eviction of encroachment ✍ Clearing Water Ways ✍ Diverting Drainage with proper filteration into waterbodies ✍ Roof Water Harvesting ✍ Decentralized/ centralized Waste Water Treatment Plants

4.2 Preparing Village/Panchayat wise Disaster management Plans: In all hamlets in all blocks should participate in developing a disaster assessment, disaster preparedness, disaster mitigation plans in both situation before occurrence of Climatic disaster such as Drought, Flood and cyclone (more relevant to coastal villages) and immediately after the occurrence of calamities. Early Warning Systems, Vulnerability Maps, Capacity Development of locals to cope and creating Calamity Fund at Village level with proper accountability should be thought of.

5.0 Way Forward in Climate Adaptation:

Water being a cross cutting issue, hydrological impacts of climate change is increasingly being addressed in projects in related sectors, e.g. in agriculture and resource management. Our water management and governance efforts so far have revealed the importance of integrating adaptation to climate change into routine government planning and management practices and of starting early to develop the capacity and knowledge base needed to support subsequent actions. The process of adaptation will involve a mix of private and public sectors. Ultimately adaptive actions will be the result of a multitude of individual decisions made by farmers, business people and consumers. It is the task of government to supply the collective goods (such as knowledge and infrastructure) needed for effective adaptation. Responsibility for coordinating adaptation action should generally rest with the ministry or department with a broad mandate such as planning or finance ministries.

Efficient water use can be supported through water saving technologies like drip irrigation, reducing water losses in water networks , agricultural lands and canals, reducing evaporation and runoff on agricultural land through crop cover (mulching) and cropland management, optimized water allocation, multiple use systems and methods of rain water harvesting. Protecting existing water resources through wastewater treatment and controlled land fills are other available technologies. Physical infrastructure will be most relevant to augment storage capacity and to flood protection. Storage Capacity can be increased through dams and reservoirs, constructing earthen enhancements along contour lines, protection of wet-lands and flood plains, artificial groundwater recharge and reforestation. Infrastructure and technologies may also support disaster prevention through construction of dams, dykes, improved regulation of reservoirs, flood plain management and flood protection facilities. Finally, information and monitoring systems including data collection, modeling and analysis are prerequisites for proper preparation of action plans.

6.0 Role of NGO's in Supporting Adaptive Action

The NGO's can support governments in formulating adaptation strategies and setting priorities. In setting priorities, it will be important for the NGO's to target

the most vulnerable regions, vulnerable groups and sectors most affected by climate change. Often, the marginalised society (e.g. subsistence farmers, herders, fisher folks and landless laborers) are the most strongly affected by climate change due to strong exposure, and low adaptive capacity. The NGO's can help the government in identifying such cases and create awareness to carry out necessary adaptive responsive actions.

While the role of NGO's is very much helpful and needed in developing a sound strategy for adaptive action by the government departments, they can also play a vital role in assisting implementing adaptive actions through pilot projects.

The Ministry of Water Resources, Government of India has set up a large number of task forces at the State and Central levels to tackle climate change through adaptation and mitigation. It would be advisable for the NGO's to get involved with these task forces for effective strategizing and integrating adaptive measures in the on-going development projects.

Lastly, the NGO's can play a vital role in creating awareness among the public at the local level through village knowledge centers and participatory action studies.

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Development News

Earth Summit 2012

The Earth Summit was held from 3rd June to 14th June, 1992. This United Nations Conference on Environment and Development (UNCED) (Rio Earth Summit) was attended by 152 world leaders.

Earth Summit 2012 was held on 20 - 22 June 2012, Rio de Janeiro, Brazil and was hosted by the government of Brazil to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. Also known as Rio+ 20, this UN Conference on Sustainable Development had the objective of Securing Political Commitment to Sustainable Development, Assessing Progress Towards Internationally Agreed Commitments and New and Emerging Challenges. The key themes of this conference are:

- Green Economy - in the context of sustainable development and poverty eradication
- Institutional Framework for Sustainable Development - including Global Environmental Governance
- Emerging Issues - critical issues that should be incorporated into the sustainable development agenda
- Review of existing commitments - looking at the progress made over the past twenty years.

Livelihood status in Chittoor tank region

M.Kirankumar *

Introduction

Chittoor is one of the most drought prone districts in Andhra Pradesh, where droughts and crop failure is a common scene almost every year due to erratic rainfall, depleted ground water and degraded water harvesting structures. Despite all these development issues the marginal and small farmers are trying to lead a descent life with their own adaptive measures like changes in cropping pattern, shifting to alternate livelihoods like dairying etc., The geographical area of Chittoor is 15200 Sq.km, having 66 mandals and 1425 panchayats. The population of the district is 37.45 lakhs. The average rainfall in the district is 930 mm. There are about 8520 tanks irrigating 104373 ha in the district. Major livelihoods of the people are Agriculture, dairying, wage employment and sheep rearing. The Major agriculture crops in the district are Ground Nut (240408), Paddy (43757), Sugarcane (33205 and Ragi (10647). Major horticulture crops are Vegetables and Mango. The Vayalagam Tankfed Agriculture Development Programme is working in five mandals of Chittoor district.

Tank program in Chittoor region has so far supported formation of farm ponds, dry land agriculture, promotion of farmers Micro finance groups, dairying, agricultural input procurement and marketing. Apart from this Chittoor region has supported promotion of alternate livelihoods like tamarind processing, brick making, sheep rearing, fish rearing etc.,

Reach of DHAN Foundation as on March 2012 in Chittoor

Location	Year of promotion	No of GPs covered	No of villages covered	No of vayalagams promoted	No of families covered	No of MFGs promoted	No of families covered
Punganur	1998	22	144	100	4,406	189	1,602
Palamaner	2003	14	37	35	1,184	60	664
Gudipala	2005	28	61	36	955	63	730
R'Samudram	2010	06	23	04	92	34	450
Total		**70**	**265**	**175**	**6,995**	**346**	**3,446**

***M.Kirankumar,** Team Leader, DHAN Foundation

Categorization of Vayalagam Members

To know the exact living status of all Vayalagam Members categorization of members and their families were done based on extent and type of land holding, occupation, stage of the family, income level and number of income sources per family. Other parameters like caste, land owned by each community, milch animals etc. are analyzed. Before categorization was done clear understanding of the process and need was communicated to field staffs and data collection was done using specified formats. The data thus generated is extremely useful to know the status and also the impact of our programs.

Livelihood Status of Vayalagam Members in Chittoor District

When the Primary Occupational status of our 3446 vayalagam members is analyzed, 1643 members were found to have agriculture as their primary occupation, which accounts for 47 % of the total. Another 30 % were found be in wage employment. This does not mean that all are landless agricultural laborers. About 10 % of those who are in wage employment have agricultural land but they do not cultivate it for lack of water, financial resources, change in attitude etc., which defiantly is a cause of concern. 12 % of the members have dairy as their primary occupation. Other occupations in which members are engaged includes sheep rearing, masons, tailors, carpenters, electricians, petty business, drivers, factory workers, private and govt. employees

Location	Agri	Dairy	Wage	Others	Total
Punganur	986	182	329	105	1,602
Palamaner	167	128	206	163	664
Gudipala	283	6	367	74	730
R'Samudram	207	85	85	73	450
Total	**1,643**	**401**	**987**	**415**	**3,446**

Land holding among Vayalagam Members

The land held by Vayalagam members in Chittoor region amounts to 7148.47 acres of which 4257.95 acres are rainfed, 1362.57 are tankfed and 1527.95 acres are groundwater fed, indicating that tankfed area is less. People in Punganur Mandal in with whom we work have 3714 acres of land of which nearly two- third is rainfed. These 3714 acres of land is owned by 2803 members and the rest 643 are landless agricultural laborers.

Irrigation source wise Landholding of members in Chittoor Region

Location	Rainfed	Tankfed	Ground water fed	Total
Punganur	2,232	645.00	837.00	3,714.00
Palamaner	580	245.00	380.00	1,205.00
Gudipala	519.95	308.57	175.95	1,004.47
R'Samudram	926	164.00	135.00	1,225.00
Total	**4,257.95**	**1,362.57**	**1,527.95**	**7,148.47**

Based on extent of land holding: if you categorize all the members as per the extent of land owned the outcome is as follows

Location	BF	SF	MF	LL	Total
Punganur	228	935	225	214	1602
Palamaner	53	198	195	218	664
Gudipala	15	90	441	184	730
R'Samudram	43	196	184	27	450
Total	339	1419	1045	643	3446

- Around 72% of members belong to small and marginal farmers category which is our focus group
- Landless contributes around 20% (they are part of only MFGs)
- Big farmers comprises of only 10%

Based on annual income and no of income sources: by categorizing all the members based on income and number of income sources we could able to see some interesting observations

Annual Income (in rupees)

Location	< 50000	50000- 100000	100000-150000	> 150000	Total
Punganur	823	530	203	46	1602
Palamaner	238	371	43	12	664
Gudipala	244	419	57	10	730
R'Samudram	209	221	18	02	450
Total	**1514**	**1541**	**321**	**70**	**3446**

- 45% of members earn about 50000-100000 per anum and only 2% members earn more 1.5 lakhs per anum
- 57% of our members have more than one income source
- 23.5% members have only one income source and most of them fall under S1 category
- More focus should be given to members with only one income source

Interventions of Vayalagams Tankfed Agriculture Development Programme (VTADP) to enhance livelihoods

Poverty levels	MFG linkage (lakhs)	Farm Ponds (nos)	Tree plantation (ac)	Land devt (ac)
S1	562.95	137	110.42	421.35
S2	421.90	241	249.30	259.87
S3	85.73	128	96.30	194.56
S4	55.58	67	195.45	121.32
Total	**1126.16**	**573**	**651.47**	**997.10**

More than 1126 lakhs credit was mobilized (87% for only S1 and S2 families) for various agriculture and livelihoods development of members. 573 farm ponds were constructed to provide supplementary irrigation for agriculture and horticulture (66% for S1 and S2 families). About 651.47 acres of dryland was brought under horticulture to enhance productivity and inturn income (55% for S1 and S2 families). Also, around 1000 acres of land was developed through various Land development activities like field bunding, tank silt application to dry lands, land leveling, laying pipe lines etc., (68% of land belongs to S1 and S2 families). To stabilize tankfed agriculture in 5750 acres 91 tanks were renovated (partly or fully). Life insurance coverage is also facilitated to 4500 members to provide social security.

According to Income level and land holding the families were divided into S1, S2, S3 and S4 category

Survival (S1):

- Landless and unskilled labour
- Dry land holding – less than 2 acre
- Annual income range < 50000 per year

Subsistence (S2):

- Land holding – more than 1 acre with irrigation source or 2.5 - 5 acre dryland
- Land less but skilled labour
- One or two milch animals or more than 15 sheep
- Annual income range 50000 – 100000 per year

Self-employed (S3):

- Land holding – more than 2.5 acre with irrigation source
- More than two milch animals
- Annual income range 100000 - 150000 per year

Self-entrepreneur (S4):

Annual income more than 150000 per year

Other interventions done

- Exclusive projects to support Natural Resources development (UPNRM)
- Every year through supply of agri inputs (seeds and fertilizers) around 200 farmers are getting benefited (through reduction in 15% input cost)
- Established 2 community nurseries and supplying quality vegetable seedlings for around 200 farmers (which increase yield by 10-15%)
- Every year around 100 farmers is getting benefited through fish rearing in ponds and getting an additional income ranges from 3000-15000
- Every year around 500 school students receiving scholarships

Strategies Planned for advancement of Livelihoods

1. Evolving livelihood models for agriculture, dairying and farm ponds with Dryland horticulture for further graduation

2. Working with paddy cultivators (1000 farmers) for enhancing productivity by atleast 15% through the following interventions

- Farm field school (soil testing, green manuring, organic farming, certified seeds etc.,)
- Technology transfer (SRI, Drum seeder etc.,)
- Facilitating collective input procurement and output marketing
- Introducing seed production
- Promotion of second crop in tank command

3. Promotion of 'dairying' in large scale (to support 1500 farmers) through

- Evolving exclusive loan products and mobilizing credit through MFGs (ex: UPNRM scheme of NABARD)
- Through promotion of 'mini dairy' concept for ensuring 50-100 liters of milk production per day

- Introducing regular veterinary care and promotion of green fodder plots
- Collective procurement of quality livestock feed (if possible establish our own feed mixing unit)

4. More focus on promotion of Farm Ponds and (or with) Dryland Horticulture to support around 1000 farmers
   - Planned to promote 475 farm ponds under IWMP watershed project, 100 farm ponds with NABARD support and 200 farm ponds with the support of HUL
   - Promotion of Dryland horticulture in around 3000 acres under IWMP watersheds
5. Promotion of Fruits and Vegetables collective marketing (through Producer Company) to impact around 1000 fruits and vegetable growers
1. Establishing LIFE centers in all locations to impart skill building trainings to members and also their children which would enhance their income (which would impact 12% of our members)
2. More focus on ground water interventions at sub basin level – cascade development, awareness on ground water usage and regulation

Approaches

For achieving livelihoods graduation or enhancement the following approaches will be adopted by location

- Creation of baseline for all the targeted families
- To evolve livelihoods models exclusive 'livelihoods seminars' will be conducted at location level
- Intensive capacity building for field staff, best leaders and target farmers to ensure their active participation
- Ensuring timely availability of financial resources (grants or loans)
- Each staff member will monitor the status of livelihoods graduation in DIG village and regularly document the progress
- Village wise best leaders will be assigned with regular monitoring of the progress and act as local resource person on livelihoods (point farmers)
- Promotion of PPG or (and) PMGs
- Strong MIS or software to track member development

Estimate for the project

S. No	Livelihood	Unit cost	Total amount required(lakhs)	Grant or Loan or Farmers
01	Productivity enhancement in paddy (1000 members)	2500 / acre	25	Farmers
02	Dairy development (1500 members)	40000 / animal	600	Loan
	Support services	Lsm	25	Loan / members
03	Farm Ponds with horticulture (1000 members)	50000 / acre	500	Grants and Loan
04	Life centers	500000 / center	20	Grants or Loan
05	Capacity building	5000 / event	04	Grants
06	Others	Lsm	16	Grants
	Total		**1,170**	

Role of programme, region and location

The DHAN Vayalagam would support the regions and locations in shaping the livelihood models and also for mobilizing resources. The regions which act as microcosm of DHAN would ensure active capacity building at all levels, resource mobilization with the support of programme, ensuring committed staff at locations and regular monitoring and evaluation. The people federations and tankfed farmers associations, being the focal point of implementation would ensure timely grounding of activities, member level monitoring to observe the graduation and liasoning with region and local mainstream institution, regular updation of MIS and documentation with the support of region ■

LIFE gave me life

R. Sandosskumar *

Who am I?

I am Gayathri.R from Thukili village of Thiruvidaimaruthur Block, Tanjore District, Tamil Nadu. I was born in a middle class family to Mr.Gurunathan and Ms Gandhimathi as the eldest of three in the year 1975. My father was a teacher in a private school. My mother was an agricultural laborer and also used to look after the two milch animals we had. My father was a drunkard which had an effect on his health, which rendered him bedridden for three months when I was 17 years old. I was pursuing 12th standard then. Though I had an ambitious plan of becoming a teacher, I was forced to marry my maternal uncle Mr. Ravichandran in 1992, (who was brought up in our house and residing with us) immediately after completing 12th My husband was 27 years old then and an illiterate and worked as agricultural laborer. My mother and my relatives compelled me to get married, stating father health as a reason and that put an end to my studies.

My married life

For one year I was living with my husband in my parent home and later shifted to Aduthurai, which is three kilometers from Thukili in search of better opportunity for living. In the meanwhile my father too got recovered and continued to work as a teacher. In the initial days I and my husband tried some seasonal business activities like selling sarees, selling bangles and other women fancy jewelry items in front of a temple opposite to her house. Though it gave some experience in saree selling. We lost heavily in the business. I lost my jewels and some cash and was forced to seek the support of my parent. My parent supported me for family expenditure and meanwhile three years were gone. I gave birth to a girl child Miss. Vinodha. My mother used to say "Gayathri still looks like a child and now she has a female child. I am much worried about her plight". My husband was illiterate and an introvert by nature. He had intermittent employment and was not able to get enough income for the family. I had no other go but to shoulder the family responsibility and waited for a right opportunity

Joining Kalanjiam

During 2004, DHAN Foundation and its staffs came to our village to identify poor families with the concept of organizing them as a self-help group. I got interested and started helping the team in doing Participatory rural approach. I helped them to mobilize the people and later in the self help group formation process. I became the member of a group called Aandavinayagar Kalanjiam, which got promoted on the auspicious day of Vinayagar chathurthi, the birthday of Lord Vinayaga in the year 2005.

We were 18 members in the group. In the initial days we saved 50 rupees during the monthly group meeting. I was selected as the President of the group by other members due to my leadership talents. I used to attend the group meeting regularly and clarify my doubts with the cluster associate Ms. R.Sundaravalli, who was guiding us in conducting the group meeting. I got clarified about the roles and responsibilities of members and leaders, kalanjiam bye laws, system, account note books maintenance, how to meet the cost of the group and the federation as a whole, bank linkage, insurance, leader's performance etc.

Initially I joined Kalanjiam only to inculcate a savings habit and later realized that kalanjiam has much more in store for me and other members. "My father used to

*R. Sandosskumar, Project Executive, DHAN Foundation

deposit some savings which was the first expenditure from his salary. I got the savings habit from him" recalls Gayathiri. Saving even Rs50/- was difficult for me, yet I cut even some necessary expenditure for the purpose of saving

Business activities through kalanjiam loan

In our Kalanjiam the savings was rotated as internal credit and later we obtained loan from Indian Bank, Kumbakonam Bazaar branch. In the initial days I got loan for family consumption needs and medical expenses. Later I thought to use the loan productively. In 2005, with the Rs500/- I got I purchased two chicks and a small goat. In the year 2006, I got Rs2000/- as loan with which I purchased another two goats. I learned tailoring from neighbor house in my school holidays. Not to waste my tailoring skills, I purchased a tailoring machine and started getting orders for stitching from my neighbors. In the meanwhile, my husband also ventured into book binding business, tea shop business and a furniture sales shop. But he was not able to manage them properly, which led to a financial loss and he again started to work as daily wage laborer. He also looked after the goats, when he was at home.

Learning beautician course

In the meanwhile my daughter attained puberty and as a customary practice we held a small function at our house. I thought of doing some make up for my daughter by hiring some specialists. As I could find none in Aduthurai, I invited a person from Kumbakonam and felt that, the fee was so high. I was not satisfied with the make up too. The idea of learning the art and starting the beauty parlor cropped in my mind, as I sensed a good potential in the business. At that time, a orientation training was given by federation co coordinator of Thiruvidaimarudhur Vattara Kalanjiam and Tanjore regional DRC at federation office regarding the courses of beautician, painting, tailoring, artificial jewelry making, embroidery are offered by NABARD. The courses were offered by the center called Livelihood Initiative for Functional Education (LIFE), promoted by the federation for providing skill training to women members. I immediately expressed my willingness to join beautician course, as the training cost was less and I was also assured of a course completion certificate from NABARD. Twenty five members enrolled in the beautician and embroidery courses. I got well trained there by experts in the field for three months. I gained confidence to start a beauty parlor of my own and two other women joined with me. Three of us decided to promote a beauty parlor as a joint venture. I contributed Rs 25000 from my savings and another Rs 25000 borrowed as a business loan from federation. Others two (Ms.Tamilselvi and Ms.Ramya) also contributed Rs50000 each, and a beauty parlor was started with a total investment of Rs1,50,000.

LIFE - Livelihood Initiative for Functional Education.

Livelihood Initiative for Functional Education is the centre promoted by Thiruvidaimaruthur Vattara Kalanjiam for providing skill building training to self help groups (SHGs) women in the year of October 2010. This centre provides variety if job oriented trainings like tailoring, beautician, painting, artificial jewelry making, saree designing, hand embroidery courses etc., at nominal cost. This centre was promoted with the fund supported (Rs.1 lakh) of DHAN foundation. NABARD too supported for initiating the beautician course by providing fund support.

The FRIENDS Beauty parlor opened by Stree Shakti Puraskar Chinnapillai

We decided to open the shop by the hands of a well known woman and the thought of Mrs.Chinnapillai, came to our mind. The Friends beauty parlor was hence opened by Stree Shakti Puraskar Chinnapillai during October 6, 2011. Mrs. Chinnapillai was also very pleased by the efforts of the women and for the opportunity of opening a shop like this. I realized that my dream at last

became true and felt glad that my decision of joining Kalanjiam, made a tremendous improvement in my life. I was used to be teased by my neighbours for always being engaged in the Kalanjiam activities and this shop was the answer to them. They now started wondering about my growth. All the three of us shared our work, from mobilizing customers, doing outdoor works and looking after the shop.

Strategies followed for Business Promotion

In the initial days we struggled to get enough customers and orders. We then decided to do some advertisement and campaigning works in various ladies colleges, public places and also my providing our service at a competitive cost. Leaftets and pamplets were printed for the purpose. The business started picking up and we remained busy all the time. The shop also started providing other services like mehandi making, artificial jewelry sales etc.,

After six months I repaid the entire loan borrowed, from the income earned through the parlor. Later misunderstanding cropped with my partners and I started doing business on my own. My skills, customer based and my confident level made me to start a separate beauty parlour. A small room was rented and it was converted into a beauty parlour cum fancy store.

Exposures

Through Kalanjiam I participated in exhibitions conducted during Thiruviayaru Aradhana Vizha at Thiruvaiyaru, Thanjavur Prahatheeshwar 1000 years Sathaya Vizha, Indian Bank Microsate Branch SHGs Livelihood presentation, Madurai symposium etc., In those exhibition, I established a stall with where sarees designing, mehandi making, eye brow making, jewel making, etc., services were provided. I could earn a considerable profit even upto Rs1000/day. I also got the best exhibit stall prize from District collector of Thanjavur, which got highlighted in newspapers. I just came from a small village, but my confidence level increased and I got empowered to stand on my own legs with great support from Kalanjiam. I never failed to participate in kalanjiam meetings at cluster level and federation level and used to share my experiences for the benefit of other women, who wish to come up in their life.

Improvement in Family

As the income improved the standard of our family also improved. My husband now works as a daily wage laborer in a CD shop. My son is studying 10th standard and my daughter is doing 12th in Aduthurai Govt. Higher secondary school. Apart from schooling my daughter is taking care of idly flour making business and tailoring work, my husband is taking care of goat and chick rearing, book binding activities after shop hours. My mother feels very proud about by growth and used to say that before joining Kalanjiam I used to be a weak woman and now I have turned into a very busy woman, who could not even spend enough time at home and could not have food at proper times.

Effective loan utilisation

Year	Loan taken(Rs)	Activities	Income earned (Rs)
2005	500	Two chick + 1 small goat	600
2006	2,000	2 goats	3,000
2006	5,000	1 tailoring machine	1000 /pm
2007	10,000	Business promotion (sarees and jewel sets)	2000/pm
2008	14,000	Purchasing of second hand scooty	Asset
2009	20,000	2 pawns -Jewel purchasing	Asset
2011	25,000	Beauty parlor	3000/pm
2012	45,000	Small land purchase	Asset
		Husband wages	3,000 / pm
		Idly flour making and book binding	1,500
Total	**1,21,500**		**14,100 income pm)**

Contribution to Federation

I was regular to all meetings and I repayed all loans promptly. I invested all loans borrowed wisely in developing my family. I used to meet power women in my area and do door to door canvassing to help them join Kalanjiam. I use Bio sand filter provided through the federation for safe drinking water and also educate other members about its use.

I also helped to promote five kalanjiam groups in nearby villages. I have been selected as EC member of cluster and Federation during 2010. I have involved in cluster and bank loan appraisal, problem solving, associates review and appraisal, delivering of movement activities like pidi arisi thittam, vilakku pooja to groups etc., I went for exposure to visit of kadamalai kundu vattara kalanjiam, vadamadurai vattara kalanjiam etc to enhance my knowledge further .

Future plan

I have grown from nothing to a respectable state in the society. I wish to be role model for others and support as many woman as possible. I wish my daughter and son to do higher studies and settle in respectable jobs. I wish to expand my shop further and also offer beautician training courses in future. Apart from this I wish to concentrate on dairying with the support of my husband.

My life is an example of how hard work can pay, if we use the opportunity that knocks our door in a proper way. When adequate support and training is given any woman can come up in their life. All they need is the will and wish to grow.

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Development News

Golden Rice

Golden Rice was the first crop variety engineered for micronutrient fortification with the intention of improving human health. The research project started in 1982 by Ingo Potrykus-Professor emeritus of the Institute for Plant Sciences and Peter Beyer-Professor of Centre for Applied Biosciences, Uni. Of Freiburg, Germany and funded by the Rockefeller Foundation, the Swiss Federal Institute of Technology, and Syngenta, a crop protection company caught the attention of the world. Genetic engineering the rice crop so that it accumulates more precursors of Vitamin A is the idea behind the research. As rice is cultivated for over 10000 years and remains as a staple food for half the world's population, enriching rice with Vitamin A is expected benefit millions of poor in the developing countries. As many as 250 million children worldwide are vitamin A deficient, according to the World Health Organization.

The research involved addition of 2 genes in the rice genome Phytoene synthase (psy) - derived from daffodils and Lycopene cyclase (crt1) - from soil bacteria Erwinia uredovora, which will enable the plant to produce enzymes and catalysts for the biosynthesis of carotenoids (?-carotene) in the endosperm. A team of scientists from Syngenta introduced "Golden Rice 2" in 2005, which produced increased levels of beta-carotene by substituting the original daffodil genes with similar genes from corn. The presence of pro vitamin A or beta carotene in the rice gives it a yellowish orange color and hence the name Golden rice. Carotenoids are an essential human nutrient because they are precursors to molecules needed in metabolism.

As of early 2012, Golden Rice was still in field trials. The International Rice Research Institute (IRRI), was also involved in the project since nearly its invention. IRRI currently partners with Hellen Keller International and, plans to introduce Golden Rice in Bangladesh and the Philippines by crossing it with local, high-yielding rice varieties. The Golden Rice project at IRRI is also supported by Rockefeller Foundation, the United States Agency for International Development, and the Bill & Melinda Gates Foundation. The Bill & Melinda Gates Foundation became a supporter of the Golden Rice project in 2011. Bangladesh approved field trials of Golden Rice, and as of 2012 estimates that varieties will be available for consumption by 2015. The project is said to be done with humanitarian concern to benefit the poor in developing countries.

However controversies are aplenty. Boiling of rice is found to reduce beta carotene by 50 %. Vandana Shiva, an Indian anti-GMO activist, by focusing on a narrow problem (vitamin A deficiency), the golden rice proponents were obscuring the larger issue of a lack of broad availability of diverse and nutritionally adequate sources of food. Other groups have argued a varied diet containing foods rich in beta carotene such as sweet potato, leafy green vegetables and fruit would provide children with sufficient vitamin A. Green peace which strongly protest against genetic modified foods is also against golden rice.

Fragrance of Madurai

S. Aravindan *

Madurai Malli

Madurai is a city of historical importance situated in the banks of river Vaigai. Of all the ancient cities of India, Madurai has a unique place with its literary efflorescence, puranic glories and continuous long history. Known as the Athens of the South, this city has several other names such as Kudal, Nanmadakkudal and Alavai, Madurai. When one thinks of Madurai two thinks comes to the mind- Meenakshi Amman temple and Madurai malli (Malli -Jasmine/Jasminum sambac). Malli or jasmine sold in Madurai and surrounding areas always comes with a Prefix Madurai and hence referred "Madurai Malli" in common dialect. Malli or Jasmine symbolizes purity, eternal love and nobility. 'Madurai Malli' is denotes all varieties and cultivars of jasmine flowers growing in the comprehensive geographical area comprises Madurai, Virudhunagar, Theni, Dindigul and Sivagangai districts lying within the latitude and longitude of 9° 13' N to 10° 47' N and 77° 12' E to 78° 49' E.

Characteristics of Madurai Malli

'Madurai Malli' includes the local varieties which are called in the local names viz., Gundu Malli, Namma Ooru Malli, Ambu Malli, Ramabanam, Madhanabanam, Iruvatchi, Iruvatchippoo, Kasthuri Malli, Oosi Malli and Single Mogra. Shape of 'Madurai Malli' buds ranges from round to oblong with short to medium long corolla tube having three to four whorls of petals

Madurai Malli growers, flower knitters and the women who wearing Madurai Malli claim that the Madurai Malli has specialised characters like deep fragrance, thick petals, lengthiest petiole, delayed opening of buds, delayed petal discolouration and keeping quality (long shelf life). The special characters of Madurai Malli enable vendors to preserve the flower under freezing condition for more than two days which is impossible with the Jasmine flowers (Malligai) of same variety (J. sambac) cultivated in other parts of the state. Madurai Malli flowers can be knitted easily by anybody with little practice because of their sturdiness and long floral stalk.

Madurai Malli differs from other jasmine flowers (Malligai) in the pattern of transformation of petal colours from the harvest to utilisation. The colour of Madurai Malli is some what greenish white when it was collected from the plant. After few hours probably at noon, the colour will turn into milky white and turn into shiny creamy white during the evening. So the whiteness of the flower will not turn into brown even after 24 hours if it is not touched or handled by us. It is believed that the above said special characters may be due to its special physical and physiological features acquired from special geographical features of in the districts viz., Madurai, Virudhunagar, Theni, Dindigul and Sivagangai.

The major floral characters of Madurai Malli are given below:

Sl. No.	Characters	Range
1	Number of petals	6 to 9
2	Flower stalk length (cm)	0.8 to 2.0
3	Corolla length (cm)	0.7 to 2.0
4	Flower length (cm)	1.7 to 3.0
5	Diameter of Corolla (cm)	1.2 to 3.5
6	Petal width (cm)	2.1 to 3.2
7	100 flower weight (g)	15.3 to 22.3

***S. Aravindan,** Senior Project Executive, DHAN Foundation

Madurai Malli yields approximately from 1237 g to 1786 g annually per bush. A Madurai Malli bush can be maintained economically up to 15 years from the planting. But there are farmers in exceptional cases, are maintaining the bushes beyond 20 years yielding profitably.

1	Gundu Malli/Namma Ooru Malli	Gundu Malli flowers are round with good fragrance
2	Ambu Malli/ Ramabhanam/ Madhanabanam	Ramabanam type flowers are oblong or long bold buds with short corolla tubes and good fragrance.
3	Single Mogra	Flowers are with three or four whorls.
4	Iruvatchi / Iruvatchippoo	Flowers with shorter corolla tube with 3 to 4 whorls
5	Kasthuri Malli	Flowers with medium long tube.
6	Oosi Malli	Long slender buds

Madurai and Malli

Madurai Malli cultivation and its usage (for adorning Deities, making garlands, knitted for use by women and for other social ceremonies) are always associated with the people of Madurai from time immemorial. The genus Jasminum is reported to comprise of 200 species. A critical analysis of this species revealed the number of true species to be only 89, of which 40 inhabit in the Indian sub continent. The three references of three cultivated species *viz.*, ***Jasminum auriculatum, Jasminum grandiflorum and Jasminum sambac*** in ancient Tamil literature belonging to the period of *Sangam era* from 200 BC to 300 AD suggest that South India may possibly be the home of at least some of *Jasminum* species. Some of the literatures mentioned about *Madurai Malli (*Malligai-*Jasminum sambac)* are listed below.

1. 'Paripaadal' is an anthology of poems of Sangam age (fifth Century BC) describing Madurai and its people. Two lines *viz.*, line number 105 of Chapter 11 and line number 77 in Chapter 12 are describing the existence of *Madurai Malli* (Malligai) and decoration of young girls using them. 'Paripaadal' is printed and published by 'New Century Book House Private Limited, Chennai – 98. The above lines are found in the page numbers 35 and 39 respectively.

Translation of the above lines are furnished below

Chapter 11-Line 105

A young maiden wore the bangles bedecked with corals
Seeing her another damsel twisted a tender stem of lilly
Around her wrist that dazzled like sapphire
Soon another following her friend made a garland
Using the blossoms of "Kuliri" found aplenty there.
Asking her to stop, yet another wore the garland
*Of **Jasmine** skilfully intertwined with "Neidhal."*
(Jasmine – Malligai)

Chapter: 12 -Line 77

The Wide river Vaigai that flowed through the land
Of the all Powerful and Ever Victorious Pandiyas
Was redolent on either side of its banks with
Fragrance of variegated flowers wafted by the breeze;
*They range from **Jasmine,** and champak,*
Water-lily, makil, lotus and kuvalai
Arabian-jasmine, trumpet-flower and tonri

Matavi and gamboge and naravam
Naka and other fine clusters that grew nearby.

2. 'Madurai Kanchi' is another anthology of poems written by sangam age poet 'Maangudi Marudhanaar' praising the famous Pandiya King 'Thalayaalanganthucheruvendra Pandiyan Nedunchezhiyan'. At the end of the anthology there are two individual poems praising Tamil language. The second poem compares Tamil language in the anthology with *Madurai Malli* (Malligai) as 'The honeyed Jasmine garlands are eternal treat to our eyes just as the Tamil of Madurai Kanchi soothes the eager listeners' ears'. The poem is translated as below.

If words be flowers, the meaning their nectar
The everlasting sweet Tamil language of the Pandiyas
Are comparable to none other than
The Jasmine garlands overflowing with nectar
And ever surrounded by honey bees.

Madurai Kanchi is edited by Dr. Silampoli S Chellappa and published by 'Andril Pathippagam', 25, C.N.K. Salai, Chepauk, Chennai 5, page number is 95.

3. Silappathikaaram is the first epic of Tamil written during post *sangam* age during the period of first century AD. This epic edited by Puliyoorkesikan and published by 'Paari Nilayam, Broadway, Chennai 108, also has a mention of Jasmine in the dialogue between Kovalan, the main male character in the epic and the folk singers of Madurai known as "Paanars". In Silappathikaaram, the hero Kovalan was shifting his family from his native place (Poompuhaar) to Madurai town. He was guided by some folk singers called '*Paanars*', who described him the city of Madurai. When Kovalan asked about the distance at which Madurai lies the *Paanars* replied, "While approaching Madurai town, we can feel a cool breeze carrying the mixed fragrances of **jasmine**, sandal, and other natural perfumes *viz.*, Akhil, saffron, Punuku, etc. Now we are feeling that kind of fragrant breeze indicating we are nearing Madurai".

4. Soodaamani Nigandu is a medical literature of post *Sangam* era, explaining the medicinal values of flowers and parts of trees. This literature is mentioning about *Madurai Malli* (Malligai) and its other names such as "Malathi', 'Adhangam' and 'Poorundi'. Soodaamani Nigandu says that the wild 'Malligai' grown as bush is referred as 'Mauval' and those found in creepers are called as ''Visaligai". The references are found in Chapter 9; Poem No. 301 in Soodamani Nigandu. This literature was written by the sage 'Mandala Purudar' and edited in the year 1927 by Mr Mani Thirunavukkarasi Mudaliyaar, Prof. of Pachchaiyappan College, Chennai and published by Mr V. Ramaswamy Sastrikal & Sons, Esplanade, Chennai.

5. Kurinchippattu is a famous anthology of poems of *Sangam* age, coming under the classification of 'Subjective *(Akam)'* literature. The term 'Subjective' refer to the personal or human aspect of emotions that cannot be verbalized adequately or explained fully. It can only be experienced by the individuals and includes love and sexual relationship.

Sangam age literatures have mentioned a list of 99 flowers. Of them Jasmine finds important place. Particularly in ***Kurinchippattu,*** the Lines from 61-96 have described a total of 99 flowers with their structure, texture, lusture, time of anthesis and other relevant flower related information. In this poem *Madurai Malli* (Malligai) is denoted by its alternative names ***'Pithikam and Mowal'.***

6. Panchapaandavar Vaikunthakkummi is a kind of folk literature of 9th century A.D. It tells the epic 'The Mahabarath' in small stories in the form of poems. 227th poem of this epic work describes a hill on the bank of 'River Valli' on the way of Pandavaas' journey during their 'Vanavaas'. From the poem we can infer that around the hill there were orchards of mangoes and coconut, gardens of Jasmine and Mathazhai and plantation of banana and Thaazhai. The poem is translated as follows.

Mangoes, coconuts found ripening in the trees
Mathazhai, and Jasmine seen blossoming in the plants
The ripened plantains weigh the trees down
The fragrance flows down from the bunches of Thaazhai.

7. From the *Sangam* age to till date Jasmine and Madurai are inseparable. It is clearly illustrated by the mentioning of Jasmine and Madurai in the poems written by recent poets. Mr Vairamuthu, the famous Tamil poet has mentioned *Madurai Malli* (Malligai) in his poem titled 'Madurai'.

Uniqueness of Madurai Malli

Even though jasmine has been cultivated in Southern Asia, *jasmine* cultivated in the specified geographical area has some specialties. That's why it is called ***'Madurai Malli'.***

- *Madurai Malli has strong fragrance than the other jasmines.*

  The fragrance of the jasmine grown in this geographical area is some what superior to that of others because of the heavy accumulation of the smell causing alkaloids *'Jamone'* and '*Alpha Terpineol'*. The laterite and red soils of this geographical area are rich in Sulphur which is the precursor of these alkaloids. More over presence of higher amounts of Potassium and the supplementary foliar spraying of Borax (Boric acid contains elements Boron) help the plant to deposit the produced alkaloids in flowers. This is the main reason for the high fragrance of *Madurai Malli*.

- *Stiff and long petals help in easy garlanding*

  The second specialty is the thickness of the petals. This thick nature of the flower gives it to some stiffness which helps more in garlanding the flower as we wish.

- *Madurai Malli has thick petals helps in postponing anthesis.*

  Normally all jasmine flowers (Malligai) grown in other parts open before or around 5 pm. But *Madurai Malli* opens only after 6 pm. Some times even after 7 pm. This is due to the thick petals of *Madurai Malli*.

- *Madurai Malli has long keeping quality.*

  We can preserve *Madurai Malli* for two days under cool condition without discolouration which is impossible with the other jasmines.

Though the cultivation of Jasmine and its usage is widespread among Taminadu, "Madurai Malli" remains the favourite for its consumers. The style in which Jasmine flowers are knitted or made as garland is also unique. Six types of knitting can be observed which are Uruttu Kattu, Pattai Kattu, Normal tying, Kadhambam Malai and Thirumbippaar. Madurai Malli hence have all the potential to be registed as a Geographical indicator (GI Registration). DHAN Foundation is making its efforts with the support of Agricultural College and Research Institute, TNAU, Madurai to get GI registration for "Madurai Malli" and which will further increase the value and market potential of Madurai Malli and spread its fragrance across the globe.

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Development News

World Bank Aid For Dairy Development

The World Bank signed an agreement with India to provide $352 million (Rs1805 crores) for the National Dairy Support Project, a step that will benefit about 17 lakh rural milk producing households. The loan will be interest free loan for a period of 25 years and a grace period of five years through the concessionary lending arm of World Bank The International Development Association (IDA. The National Dairy Development Board (NDDB) has prepared a National Dairy Plan (NDP) to improve animal productivity, strengthen infrastructure for milk procurement at the village level, and enhance milk processing capacity and marketing, backed by appropriate policy and regulatory measures, based on which the loan got sanctioned. The project will cover some 40,000 villages across 14 major dairying states and is expected to directly benefit about 1.7 million rural milk producing households. The primary focus of the project is on increasing milk yields by genetic improvement of the dairy herd (cows and buffalos) and optimal use of feed and fodder. The 14 states included in the Project account for more than 90 per cent of the national production and include states such as Bihar, Madhya Pradesh, Orissa, Rajasthan, and Uttar Pradesh. More than 70 million of some 147 million rural households depend on dairy, in varying degrees, for their livelihood.

Farmers New Initiative-Thottam Super Market

Appropriate price for the produce remains a distant dream for farmers, because of market intermediaries, post production handling and lack of support by the government. To break this trend, DHAN Foundation has facilitated farmers to come together to initiate "Thottam Super market" a grocery cum vegetable shop in OMR road, Sholinganallur, Chennai. . Spread over 1700 sq ft store, this houses exclusively fruits and vegetables and organic groceries.

Inauguration of the same was done on 13.06.2012.Mr.M.P.Vasimalai, Executive Director, DHAN Foundation when speaking about this said though more than 70 % of families in India are engaged in agriculture and allied activities either directly or indirectly. Yet the plight of the farmers is pathetic, which can be reversed by implementing schemes that directly benefit the primary producers of agricultural produce. Agriculture then can become a important tool to reduce rural poverty. Advancing agricultural technologies and reaching it to farmers, timely and affordable credit to them and shortening the length of marketing chain will enable farmers to reap profits. The loop holes in extending these facilities should be weeded off. A platform that facilitates farmers to create a market for their produce is the need of the hour. DHAN Foundation is engaged in organizing poor farmers and assisting them to market their produce. "Thottam super market" is one such initiative. More "Thottam "shops will be established in Chennai, in near future to enable farmers from different district to market their produce. Farmers federations promoted by DHAN Vayalagam Foundation will play a key role in creating market facilities for their member farmers through the Producer company called SAMAGRI (Small and Marginal Agriculture (India) Producer Company limited (SAMAGRI- Sanskrit word meaning Completeness/Totality). SAMAGRI would capitalises on the existing gaps in the supply chain and reach the consumers by eliminating, if not all, most intermediaries in the current chain.

Mr.Ganesh, the Coordinator of " Thottam Shop" in his speech said that Hitherto only bigger companies has opened Grocery and vegetable super market chains " Thottam shop" is a trend setter in breaking this by proving that farmers too can establish such shops by organizing them into primary producer groups and forming a producer company SAMAGRI. The boards of directors of SAMAGRI were farmers and they will look after the management of "Thottam Shop". Since procurement is done directly from farmers, the initiative will help both the farmers and consumers to get value for their produce and money respectively.

Mr. Ananda Harti, Mr.Murali Rangappa, Mr. Jagadeesh Patna, Mr. Maheshbabu Chanakanti, Mr. Venkat Reddy Chandagalla, Farmers and Directors of SAMAGRi also participated in the inauguration of the "Thottam shop"

National Food Security Bill - A long way to go

S.Ramesh *

The Back ground

The draft of the National Food Security Bill was tabled in the parliament recently as promised in the election manifesto of the congress which evoked a mixed response. The objective of the proposed law is hence "to provide for food and nutritional security...by ensuring access to adequate quantity of quality food at affordable prices, for people to live a life with dignity". Food security thereby implies ensuring nutritious food to the population of the country, aimed at ensuring the health and thereby the wealth of all classes of people.

This all started in 1965, when India introduced universal Public Distribution System (PDS) with the aim of maintaining stability in the prices of essential commodities across regions, ensuring food entitlements to all sections at reasonable and affordable prices; and keeping a check on private trade, hoarding and black-marketing. In 1997, the PDS was converted into Targeted PDS (TPDS) through classification of its population into Above Poverty Line (APL) and Below Poverty Line (BPL) categories. Only those households classified as BPL were made eligible for subsidized purchase of commodities from ration shops

Presently where come the need arise for the proposed food security bill? What is the real intention for drafting such a bill? How the new system of PDS suggested will cater the need? What will be the cost of implementation? Whether this bill can ensure that subsidies for food are directed only to those who deserve? Whether wheat and rice the major staple foods, which has replaced the usage of more nutritive minor millets due to changing food habits can serve the purpose?

Well. As per the government, which drafted this bill the need was necessitated since the economic growth of the country did not improve the health condition of the people as widely believed. 22% of Indians are undernourished, 33% of women (age 15-49 yrs) have BMI less than normal, 78 and 47 % of the children (age

3 - 35 months) remain anemic and malnourished respectively. In fact, the reverse is true good health can bring good economic development is the principle underlying the policy.

Salient features of the bill

1. **Legal entitlement to subsidized food grains:** To be extended to at least 75% of the country's population - 90% in Rural areas and 50% in urban areas. The priority households (46% in rural areas and 28% in urban areas) to have a monthly entitlement of 7 Kg per person at a subsidized price of Rs.1 per Kg for millets, Rs. 2 per Kg for wheat and Rs. 3 per Kg for rice. The general households (39% rural and 12% urban in phase 1 and 44% rural and22% urban in final phase) to have a monthly entitlement 4 Kg per person at a price not exceeding 50% of the current Minimum Support Price for millets, wheat and rice.
2. **Entitlements to destitute, homeless, migrants and disaster affected persons:** Appropriate scheme to be piloted, like community kitchens run by any agency identified by the government
3. **Diversifying the food basket:** Inclusion of other nutritious cereals (such as bajra, jowar, ragi, and maize) as part of the food security basket finds a place in the bill.

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4. **Life cycle approach from pregnancy to old age:** Access to adequate and appropriate food throughout the life cycle of a human being from pregnancy to old age so as to ensure a healthy body and mind.
5. **Entitlements of Pregnant and Nursing Women-** Take home rations or nutritious cooked food to pregnant women and six month thereafter through anganwadies and Rs1000/month as maternity benefits for a period of six months
6. **No denial to any child below 14 years:** Any child below the age of 14, including those that are out-of-school, may approach any feeding facility such as anganwadi centre, school mid-day meals, destitute feeding centres for midday meal
7. **Procurement of Food Grains:** Encourage State governments to undertake a decentralized planning process and to procure, store and distribute food grain at local levels from district to panchayat, with a view to minimize transportation costs and losses and provide state governments with the appropriate facilities and incentives
8. **Power to delegate:** Lies only with central government. Under the National Food Security Bill, the State governments do not have the right to identify the beneficiaries, extension of rights or making efforts at giving better security.. But can offer powers upon request to State government
9. **Fair Price Shops:** preference to community institutions such as Self-Help Groups and Cooperatives or public bodies such as Gram Panchayats or nongovernmental organizations
10. **Ration Cards:** Ration cards shall be issued in the name of an adult woman member of the family

Some reflections on the bill

The food security bill is drafted with differential subsidies; differential entitlement for priority and general groups and also focuses on individual entitlement rather than family entitlement to reach larger section of the people. This is to further streamline the existing system and ensure fair distribution, the objective of which cannot be questioned. However, categorizing people to priority and general groups is not an easy task which may lead to bias, chaos and confusion, without appropriate standards and system for such classification. The draft does not come with a specific strategy to address this problem. In a country where there is no uniformity in poverty estimation data and where the income fixed by the planning commission for classification of above and below poverty line is much criticized, arriving at the target 'priority' and 'general' groups will be a difficult task without clear guidelines and system for enumerating the priority, general and excluded groups.

Special entitlement to destitute, homeless, migrants and disaster affected people is a welcome move. Also special focus on pregnant women and children for preventing malnutrition, preference for community institutions like SHGs to open ration shops and ration card in the name of women head of the family were good initiatives. No denial of food to any child below 14, is likely to have a negative impact also on the present midday meals program concentrating on school going children. Practically, midday meal program was initiated to attract children towards education and if food is entitled to them even if they do not attend the school, it may lead to school drop outs in near future and hence this should be implemented with much caution.

Also there is an Increase in food subsidy through the National food security bill proposed as follows

Subsidy (in Crores)	First Phase	Final Phase
Total Subsidy	71837	79931
Current Subsidy	56700	56700
Additional Subsidy	15137	23,231

This will add to subsidy burden of the country. The inclusion of millets in the PDS, though a welcome move, cannot be implemented on large scale since minor millet production is low and can be done only based on the food habits of people in a locality. The powers of identifying the beneficiary entirely lie with the central government which may leads to exclusion, dichotomy and denial

Can the bill address the problem of malnutrition?

Many a schemes have been implemented in the country, for preventing malnutrition and yet the problem continues to prevail. The estimation that 47 % of our children are malnourished, necessitate complete scanning of all our schemes and the implementation strategies to find a appropriate remedial measure. Food security bill alone cannot solve this problem. An article (EPW, July, 2009) says that along with access to cheap

grain, to create other entitlements that guarantee good nutrition is important. This requires not only nutritious food (including a balanced intake of calories, protein, fats and essential micronutrients) but also attention to childcare, clean water, hygiene, basic healthcare and so on. Moreover, even with a narrow focus on food alone, a Right to Food act (RTF Act) based on the bill proposed would have to link with a wide range of issues, including, for instance, access to land, water and forests, which play an important role in people's livelihoods. Clearly, this goes beyond the sort of legislation that is being contemplated at the moment, and requires political will and vision of a kind that is sorely lacking.

Long way to go

Gone are the day of Madras and Bengal famines, though reports of starvation deaths on smaller scale mainly due to poverty is reported here and there (farmers in Tanjore belt, the granary of Tamil Nadu were forced to eat rat meat when river Cauvery failed to meet their irrigation requirement few years back). This food security act focuses to protect people against such starvation by giving special allotments. The paradox that hunger, starvation and malnourishment exist alongside the mounting piles of food grains to a tune of around 55 million tonnes in the government granaries may seem dramatic. The truth is rice and wheat can fill the stomach and cannot solve nutrition problems, millets, pulses and vegetables being more nutritive than these grains. Though there is provision for supply of millets through PDS, in the current bill, their production is much low. As a long term vision, government can encourage production and consumption of millets, allocate more subsidies for it and can reduce the subsidies for rice and wheat. It is a common phenomena in the rural household now that rice supplied through PDS is fed to cows, since cost of cattle feed has escalated (cattle feed pellets cost Rs 950/bag of 70 kg). Moreover the PDS distribution channel has currently has many loop holes, resulting in smuggling which is the major leak in the system. The reforms in the PDS in Chattisgarh through Chattisgarh Public Distribution System (Control) Order, 2004 paving way for community organizations (SHGs, Panchayats and cooperatives) to run ration shops and transforming the distribution system can be a model for the country.

The problem of diversion of food grains while they were being transported from government godowns to PDS outlets in private trucks was reduced substantially, by the decision to dispense with private players and directly deliver food grains to ration shops. To make this process transparent, the government trucks engaged in "doorstep delivery" of PDS food grains were painted yellow. Also it was made mandatory for food grains to reach ration shops by the seventh of every month. The entire process was computerized, the message of quantity of food grain transported to a particular ration shop was sent through mobile to key persons in the village, enabling them to verify and record the unloading process again through mobile technology. The means and demonstration lies within our country. The integration of various schemes to address the food security and nutrition problem under a common umbrella, including the reforms in agriculture only can solve the problem of hunger and malnutrition. Instead of subsidies more focus should be given on increasing the buying capacity of the poor. This would also enable to reduce the expenditure on subsidies in long run.

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Devipattinam

Thilakeswara Temple, popularly known as Navagraha Temple is located at Devipattinam, a coastal village 70 kilometers from Rameswaram, in Tamilnadu,India. Shiva here is worshipped as Thilakeswara and the Goddess is known as Soundaryanayaki. The shrine has a beautiful image of Goddess Durga with eight-arms holding weapons in each. It has a small temple inside which is dedicated to the goddess who is said to have killed the demon Mahishasura. The temple of Adikesavaperumal (Lord Jagannatha) is located on the shore. The sea is very calm and quiet and the atmosphere is very serene. About hundred yards inside the sea are the nine withered blocks of stone, supposed to be the Navagrahas, the nine planets.

Devipattinam is the only place in the world where Navagrahas (nine-planets) are located inside the sea. Most of the original statues of nine planets have got battered and are not recognizable as any particular planet. Devotees at the temple offer nine varieties of grains including paddy, wheat, pulses and other things to the Gods and Goddesses. About hundred yards inside the sea lies nine withered blocks of stone, supposed to be the Navagrahas. These stones can still be watched partly submerged in the water near the bathing place of Navagraha Temple. The Hindus perform religious rites for their forefathers in this temple. People come here to perform Tarpan for their ancestors.

History of Navabashanam Temple - Devipattinam

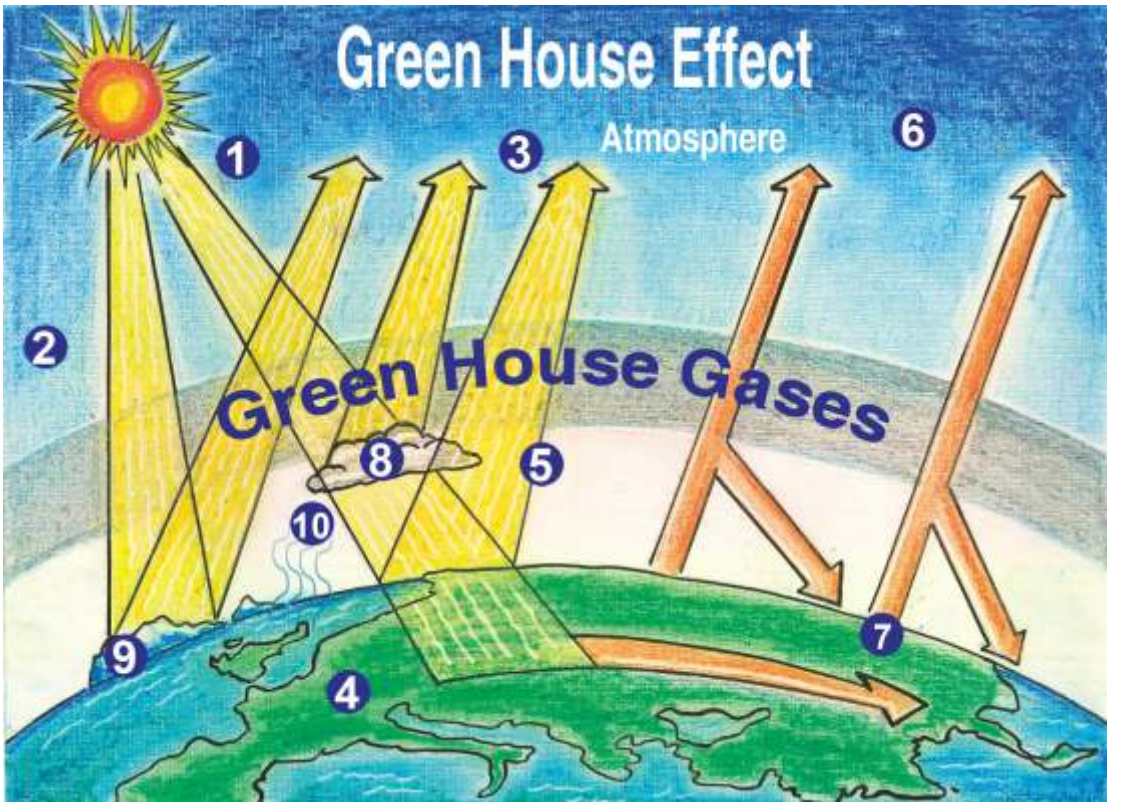
According to the legend, Devi Mahishasuramardini came into Lord Rama's dream and directed him to visit Devipattinam and worship Navagrahas to get relief from his misery. She told Rama that he was suffering from misfortune due to the adverse planetary conditions. Rama was heading towards Ravana's lanka to save Sita from his wrath. After performing a special puja dedicated to Lord Vinayaka in Uppur, he went to Devipattinam for Navagrahas puja. When Rama came to Devipattinam he did not find any shrine dedicated to nine planets. He made the statues of nine planets out of the ocean's sand. It is also believed that while Rama was creating the Navapashanas (Navagrahas), Lord Jagannatha calmed down the ocean so that he could perform his puja without any disturbance.

Since that day Devipattinam is well known as a place where a person can get relief from adverse planetary conditions by performing the appropriate rituals. This Navagraha temple in the midst of the sea is a divine wonder since ancient days.

Significance of Navabashanam Temple - Devipattinam

According to astrology, the life of a human depends upon the conducted and positions of nine planets. The outcome of these placements are subjected to rejoicing or sufferings based on their deeds in the previous birth. Therefore, devotees come here to worship these planets and get relief from their sufferings. Devotees offer nine varieties of grains, wheat, pulses, ellu etc. They take a round of the deities and perform Navagrahas puja i.e worshipping the nine planets.

In the month of Avani (August-September) all Sundays are celebrated as festival days. Devotees can be seen visiting the temple in huge numbers during these festivals. Adi Amavasya festival is observed for 10 days in the Thai month (January-February) and draws people from around the country to participate in it. Devotees visit the temple almost every Sunday, especially on the Aslesha Star (Ayilyam) days.



1. Sunrays passing through clear atmosphere
2. 240 watts heat per square meter reaches the earth
3. Earth reflects back 103 watts
4. Earth absorbs 160 watts heat per square kilo meter
5. Greenhouse gases prevents UV rays from escaping, there by contributing to increase in temperature
6. Increased heat reflects more UV rays to atmosphere
7. The earth gets further heated and sense more UV rays
8. Evaporation increases and leads to more cloud formation. Clouds inturn reflects more sunrays to earth
9. Icebergs reflects sunrays. At the same time they melt by absorbing heat.
10. Water vapour is an important green house gas. It contributes to increasing atmospheric temperature.

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Mixed farming is a traditional coping strategy

Farmers involved in rainfed farming have traditionally been adapting to the climatic aberrations with homegrown technology of mixed farming. Mixed farming contributes to adaptation to climatic change because diversification of crops and livestock expands options for the farmers to face the uncertain weather associated with the increased climate variability. Mixed cropping can also give a more stable production because if one crop or variety fails, another may compensate. Livestock helps to save and invest in the future. For rainfed farmers, livestock is a liquidable asset that can be sold at times of need such as crop failure due to drought or floods. Mixed farming systems maintain soil fertility by recycling soil nutrients with crop rotation between cereals and legumes, or allowing land to remain fallow.

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