

# Development

May 2017

Monthly Development update from DHAN Collective

# Matters

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# Prime Minister Fasal Bima Yojana Crop Insurance Scheme Challenge or opportunity?





Giving forward is an expression of maturity in the act of thanksgiving. So far, charity is seen as giving back to the society, but giving forward is a movement which aims at multiplying the benefits to the needy to maximise wellbeing through their collective action. The walkathon organised by DHAN Foundation in over 25 places across India was focused on the theme “Giving Forward”. The message has reached more than 200,000 people by way of pamphlets, exhibitions, and rallies. More than 100,000 people participated in the rallies held in various places.



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## From the Editors' Desk

### Dear Readers,

Greetings from DHAN Foundation.

It's a pleasure to bring back our Development Matters, sharing our experiences and field learnings. This issue comes with a lead article on PMFBY insurance scheme, its challenges and opportunities. The impact of Pambar – Kottakaraia river basin through DHANA project in enhancing the income of the targeted community is featured. Walkathon 2017 organized in 25 places across India in the theme of “Giving Forward : Celebrating Community Financing” gives you an overview about the event. GoI instigated Jan Aushadhi (generic medicines) and its benevolence also got nicely articulated. Is it retrieve and salvage Extinct of species in the name of development. Many of us believe it as highly improbable. The voyage to the Gurukula Botanical Sanctuary gives hope to the man kind that restoration is possible.

The readers are welcome to give their suggestions and feedbacks on the articles featured in the development matters. They can send their mails to [ghancdc@ghan.org](mailto:ghancdc@ghan.org)

Happy reading!

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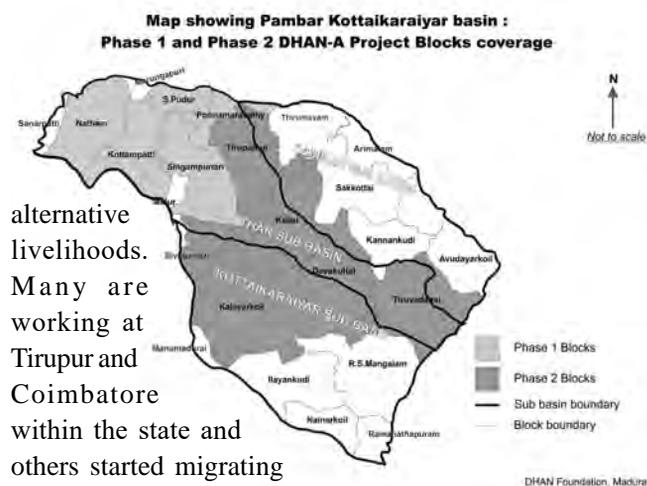
# Impacting on water based livelihoods at Pambar-Kottakaraiar basin, Tamil Nadu with Axis Bank Foundation support

Venkatesan N & Mohan J\*

The Pambar-Kottakaraiar River basin is one among the 17 basins in Tamil Nadu and it originates near the hills of Natham in Natham and Sanarpatti blocks of Dindigul district and flows through a portion of Madurai, Dindigul, Sivagangai, Pudukottai and Ramanathapuram districts and finally drains at Bay of Bengal near Thondi off the east coast. Thirumanimuthar, Kottakaraiar and Pambar are the three sub-basins of Pambar-Kottakaraiar. This entire river basin is known for intensive tankfed agriculture and most of the residing families here are small and marginal farmers and they mainly depend on agriculture for their livelihood. The river basin is non-perennial. To tap the monsoons, the ancestors created tanks and ponds in the whole stretch to meet water requirements.

## Project Background

The Pambar-Kottakaraiar river basin region is endowed with hundreds of small-scale water bodies namely irrigation tanks and village ponds. These water bodies are the source for irrigation, agriculture and drinking water needs, etc. In the past, these water bodies have been maintained and managed by the local community through **Kudimaramath** (system of contributing voluntarily to rehabilitate water bodies). During the British rule, the local management system of water bodies was shifted from the community to the state. Then onwards, the local management system of the community was alienated as the state took over the responsibility. During the last 3 to 4 decades, these water bodies have faced many management issues. This results in uncertainty over the survival and sustainable utility of these structures. Over the years, the unpredictability of monsoons and the in-capacitance of water bodies resulted in agricultural loss. The above issues led farmers to lose interest in agriculture. The youngsters were seeking labour work as



alternative livelihoods. Many are working at Tirupur and Coimbatore within the state and others started migrating to Middle East countries such as Malaysia and Singapore. The old people in the villages were deserted and left with little or no source of earnings on their own.

DHAN initiated a study to map out vulnerable tanks and ponds for floods. The study revealed that because of poor management of tank system and lack of maintenance, many tanks have got breached during the floods in 2005 and 2007. There was greater community interest for a proposal to revive the tank system in this sub-basin. It could result in ensuring food security and livelihood opportunities of the small marginal farmers in the area. It was also observed that many villages in the area are still using the drinking water ponds as their drinking source. These water bodies are in dilapidated conditions and people are facing drinking water problem. Based on the assessment, DHAN contemplated a holistic river basin watershed development initiative (**DHANA Project**) and collaborated with Axis Bank Foundation (ABF). It proposed to address the livelihood and drinking water issues of the farming community in the project area employing comprehensive ways and approaches.

\* Mr. Venkatesan.N, Programme Leader & Mr. Mohan.J, Team Leader, DHAN Vayalagam (Tank) Foundation

## Proposed interventions

**DHANA Project** was initiated in 2011 with the objective of conservation of small-scale irrigation tanks for poverty reduction through agriculture and safe drinking water development in Pambar-Kottakaraier River basin, Tamil Nadu. This project covers renovation of 750 waterbodies including 610 tanks and 140 village ponds in the Pambar-Kottakaraier River basin to enhance the livelihood of the 30,000 poor farming household for their economic development and environment safety

### Project implementation and Approach:

- DHAN Vayalagam (Tank) Foundation formed a project team in the project locations at the proposed blocks.
- Project teams identified water bodies for development interventions and organised the community for promoting associations.
- DHAN Vayalagam (Tank) Foundation provided adequate techno managerial support to the project team and community.
- Developmental interventions were undertaken through the people with their planning, monitoring and contribution.
- Project teams were involved in estimate preparation, monitoring and documenting the work.
- Endowment fund and Agriculture Finance Groups (AFGs) were created for the sustainability of the institutions and future maintenance.

### Impact of the DHANA Project:

The project was completed in 2016. The following table portrays the set target and the actual achievement.

S.No	Project Component	Target (2011-2016)	Progress (2011-2016)	%
1	Tank Development works	525	520	99
2	Village pond development	140	144	103
3	Fish pond development	85	97	114
4	Agriculture Demonstration	80	80	100
5	Livestock Development	80	80	100
6	Endowment creation	425	405	95
7	Catchments treatment	60	60	100
8	Fisheries development	100	91	91
9	Beneficiaries	30,000	27,518	92

The Objectives of the projects are

- Creating nested people institutions for the 750 water bodies
- Conservation and development of 750 water bodies
- Creating an endowment for tank institutions
- Creating demonstrations on sustainable agriculture interventions for productivity enhancement
- Creating demonstrations on livestock development for enhanced productivity of livestock
- Treatment of catchment for arresting the siltation of tanks and channels in the project area for long life of the tank system
- Fisheries development for ensuring food security and enhanced revenue for the people institutions and sustainability

The maximum number of tanks that were modernized was 130 in Sivagangai, followed by 105 in Madurai, 87 in Puthukkottai and 77 in Dindigul.

### Evaluation & Assessment

The Water Technology Centre (WTC) of Tamil Nadu Agricultural University (TNAU) has been assigned the impact study by the ABF. As the works spread across four districts, to draw equal number of respondents across blocks/districts minimum number of tanks viz., 77 tanks in each district were considered as the base population for the study. Seven out of the 70 renovated tanks (10%) were randomly selected from each block. Ten respondents were randomly selected from the list of beneficiaries. Thus, a total sample of 280 (10 × 7 × 4) respondents was selected to represent the tank beneficiaries.

### Tank Intervention

To access the impact of the initiative, change in the income levels of sample households was accessed. The assessment among the tank beneficiaries shows that overall there is 58.35% increase in income from their

base assessment. The highest change was observed in Madurai district (85%) followed by Pudukkottai (52.24%), Dindigul (46.15%) and Sivagangai (43.86%). However, this again has relevance with the climatic conditions that prevail in the project area.

In Madurai district, the actual rain fall received during the impact study period was far below the normal rainfall. Under this adverse situation, crop cultivation had not sustained, yet the households had diversified their source of income through engagement in non-farm activities. The change in the crop intensity was recorded maximum as 32% in Sivagangai and 5.72% as the minimum in Dindigul, S. Puthur was 18.53% and Ponnamaravathy recorded 23.74%. Rain water harvested in the renovated tanks, ensured improved groundwater table, thereby enabling farmers to grow a second crop also and hence cropping intensity was the highest in Kottampatti block.

Major crops cultivated in the project area were paddy, coconut and groundnut. Agricultural demonstrations such as System of Rice Intensification (SRI) method of cultivation, selection of variety and timely availability of credit were facilitated. In Natham block, perennial crops such as mango, guava and coconut were raised. The fear of loss due to non-availability of irrigation water and reduced harvest was wiped off after deepening of tanks and application of silt from the tanks in the coconut garden.

Ultimate impact of the project activities is supposed to reflect the change in income level of the sample households. Hence, percentage change in the annual

income accessed from the sample households was analysed. It was found that there was 65% increase in income. The highest income increase was recorded as 85% in Madurai district and the lowest of 43.86 % in Sivagangai district and 46.15 % in Dindigul and 52.24% in Pudukkottai. Average change in household income at the sample level for tank renovation beneficiary households was 64.93%.

Harvesting rainwater in the deepened and renovated tanks had become a remote question in the absence of normal rainfall. However, fortunately, spreading of silt acted as a mulch cover to prevent moisture loss from the coconut gardens. Totally, 1.29 lakhs cubic metres of water holding space was created in the existing tanks. Maximum excavation of 36,770 M<sup>3</sup> was done in Pudukkottai, followed by 31,988 M<sup>3</sup> in Madurai, 15,843 M<sup>3</sup> in Sivagangai and 15,380 M<sup>3</sup> Dindigul. As a whole 45.86% of the soil removed was applied to the cultivated lands. This practice helped conservation of soil moisture for longer days and keeping the coconut trees in normal condition preventing them from drying and withering due to the scorching sun and heat waves. As a result, even though the yield of nuts in the coconut trees was low 40-50 nuts/tree/year against the normal average yield of 120-150 nuts/tree/year. This yield was made possible only through tank renovation carried out by DHAN Foundation. The same was observed in the case of groundnut also. It could be observed that percentage change in the annual employment days was influenced by the work.





### **Fish Farm**

Among the samples for fish pond construction household beneficiaries, the average change in household income was 52.19%. It was observed that average household income was ₹ 1,10,847 per year. Major source of income from the sample for fish pond beneficiaries was through crop income.



**Overall impact (Study result of WTC, TNAU narrates the impact of the village pond as follows.)**

Supply of bore well water to the villages through common water supply system of the panchayat has improved. After ensuring satisfied storability in the renovated tanks and ponds, panchayat leaders started digging bore wells and fixing hand pumps/motor pumps to extract underground water for common needs. Recharge of wells in the farm lands motivated farmers to expand the area under cultivation, extend the cropping

season, increase their cattle population, and produce high value crops etc.

Cattle owners reduced stall feeding of their animals with dry fodder and concentrates. They allowed cattle to graze in the open grounds and tank bunds. The villagers reported that the animals became healthy and stronger.

The reduction in time spent on fetching water ranged from 50-75%. However, quantity of water collected from the village ponds per week by the households increased. Earlier, the villagers had to walk for 60-75 minutes to fetch drinking water from the nearest source. After renovation, they were able to obtain drinking water by travelling for 15-30 minutes. It is observed that the additional water holding capacity generated could be retained for six months. Sharing and exchanging the success stories among the departments and converging the efforts towards such other beneficiaries in other similar context will result in their overall welfare.



# Walkathon 2017: Giving Forward: Celebrating Community Financing!

The walkathon organised by DHAN Foundation in over 25 places across India was focused on the theme “Giving Forward”. The message has reached more than 2,00,000 people by way of pamphlets, exhibitions, and rallies. More than 1,00,000 people participated in the rallies held in various places.

Giving forward is an expression of maturity in the act of thanksgiving. So far, charity is seen as giving back to the society, but giving forward is a movement which aims at multiplying the benefits to the needy to maximise wellbeing through their collective action. Realising the gestures of mutuality exists in the community in various forms from its more than three decades of grassroots work, DHAN has poised to further this value among the collective institutions promoted by it.

## Why Giving?

Though written 2000 years ago, the views expressed in the couplets by Thiruvalluvar, a Tamil sage-poet on the ‘act of giving’ are still relevant today. He advocates a universal behaviour of helping people in need. He emphasises the need to do any act without any expectation. He says that all our acts should be aimed at helping a fellow human, who is in desperate need without expecting any compensation. The following couplets depicts the “the art of giving”.

All the wealth that toils give  
Is meant to serve those who deserve. (Kural: 212)

Strong is the strength of enduring hunger,  
But stronger still is the strength of relieving it. (Kural: 225)

**Meaning:** All the wealth acquired with perseverance by the worthy is for the exercise of benevolence. The power of those who perform penance is the power of enduring hunger. It is inferior to the power of those who remove the hunger (of others).

## Why from “Giving Back” to “Giving Forward”?

- To build the contribution of the poor communities.
- To enable poor from relief to release by building institutions for generations.
- To build sustainability in their activities in achieving their goal of poverty alleviation through collective action.
- To facilitate system for feeding them a life time (Instead of giving fish, teach him to catch a fish).
- To organise poor into productive communities through skill building and creating forward and backward linkages for enriching their standard of living.
- To facilitate the poor to know the strength of their solidarity by enabling poor communities to graduate themselves to civic institutions to address their own needs of health, education and housing needs.

## Communities are showing the way!

The self-help groups promoted by DHAN start meeting their costs of operations from day-one of their inception and over a period they manage to meet the costs of operations of the next-level institutions promoted by them such as cluster development associations and federations. In 2016 alone, people have contributed ₹ 146 million, one-third of the overall costs of management.

Community to contribute its share in the overall development endeavour has been a non-negotiable component in DHAN’s strategy. People save in their SHGs and contribute towards rehabilitation of water resources for collective benefit. Surprisingly, their contributions stood at 54% (₹ 724 crores) outshining the support came from government and banks in 2016 (₹ 617 crores). The community contribution triggers the support from others.

The People Movements promoted by DHAN with women, farmers and coastal communities kindle the

feeling of giving. Every year, they generate Jyoti contribution from families to support people in need, help communities facing emergencies and affected by disasters and reach out to left-out poor families. They also contribute materials (pidiarisi – handful of rice set aside every day, pooled and shared for the needy) and involve in voluntary labour (shramdhan) to maintain the common properties.

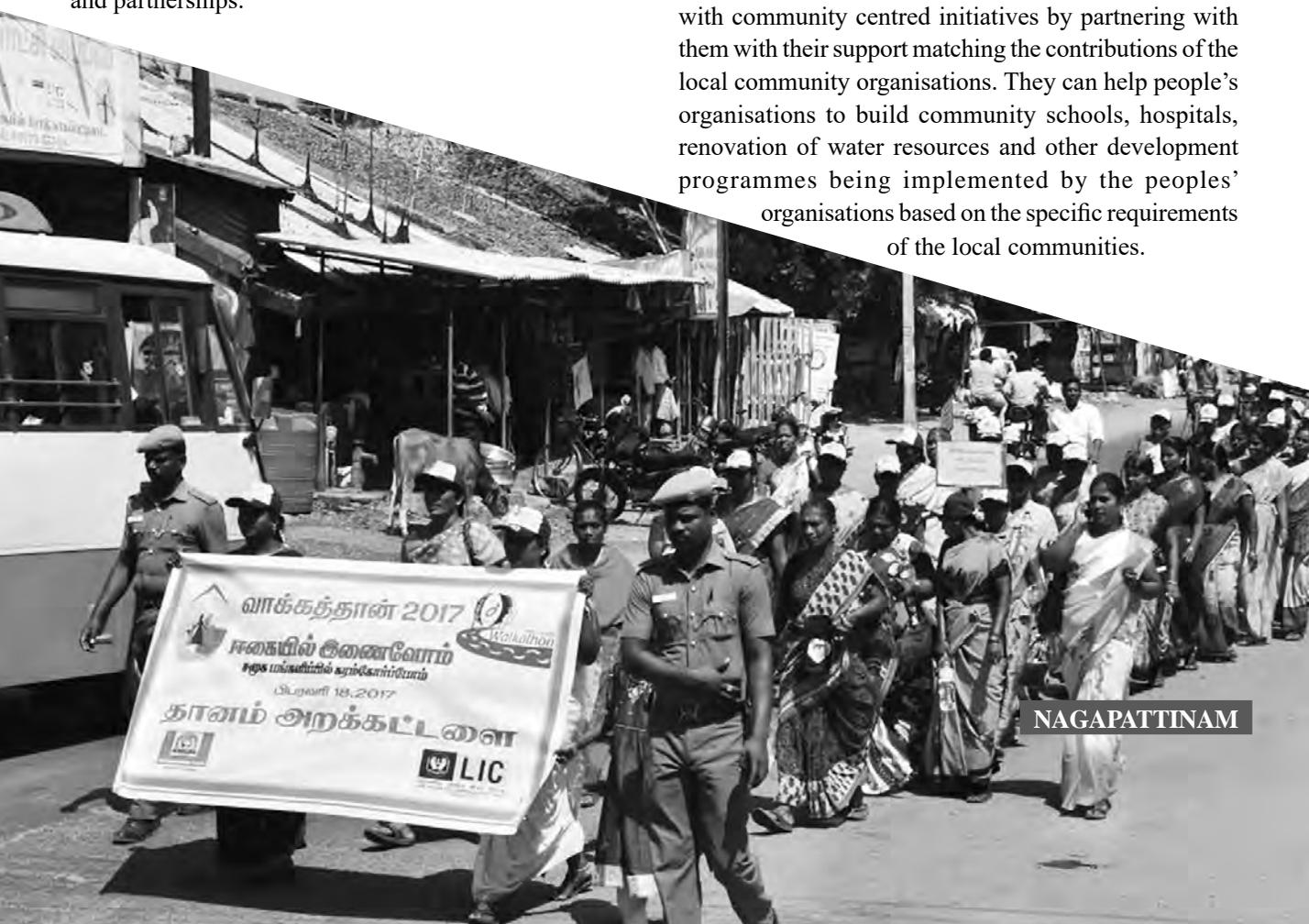
### **Lend your hands with the Communities to Rise-up**

Eradication of poverty requires collaborative efforts and resources. If we consider India as a country with rich and varied heritage of giving, we could say the same about other countries too. In India especially, there are various kinds of dhan (donations). Shramdhan is giving labour, Annadhan is giving food and Vidhyadhan is giving knowledge. These were various ways available in the past. However, today and for the future, especially in the present context, there exists a need for various ways of giving. DHAN is working on promotion of a sharing culture among the poor communities with whom it is working, the general public both in India and abroad, and corporates through creating meaningful opportunities and partnerships.

### **Corporate matching for community funds**

Corporate Social Responsibility(CSR) spoken everywhere is expected to contribute to sustainable development by delivering economic, social and environmental benefits for all stakeholders beyond their companies. It denotes their sense of responsibility towards the community and environment (both ecological and social) in which it operates. Companies can invest in local communities and participate in their collective efforts towards development. In order to account for the importance of social and ecological considerations in doing business, some organisations advocate the concept of the “triple bottom line”: social, environmental and economic – or “people, planet, profit.” Today, a shift has occurred in the way people conceptualise corporate social responsibility. Now, many entrepreneurs consider profit and social-environmental benefit to be inextricable.

In the era of CSR, where there is a legal requirement for the corporates to set aside a portion of their profits for CSR, the businesses should balance profit-making activities with activities that benefit society; it involves developing businesses with a positive relationship to the society in which they operate. The corporates can work with community centred initiatives by partnering with them with their support matching the contributions of the local community organisations. They can help people’s organisations to build community schools, hospitals, renovation of water resources and other development programmes being implemented by the peoples’ organisations based on the specific requirements of the local communities.





MADURAI



RAMNAD



SIVAGANGAI



SALEM

## Madurai, Tamilnadu

“The future of our country is in the hands of youths, who are transforming our nation with their productive engagement. We are yet to make a giant leap in tapping their potential. We need to nurture good behaviours from early childhood”, said Madurai District Collector Veerarahava Rao. Lauding the theme of the Walkathon ‘Giving forward’, Rao highlighted the role of women SHGs in furthering their economic empowerment and their contributions in helping the needy in his felicitation address. He addressed the participants of Madurai Walkathon 2017 focusing on “Giving Forward” organised by DHAN Foundation in Gandhi Museum, Madurai on 18 February, 2017. Overwhelmed by the participation of women and school students in large numbers Veerarahava Rao has called for their collective action to make Madurai free of pollution (Maasilla Madurai). He advised them to construct toilets in their

home with government subsidy or use common toilets to avoid health hazards and environmental pollution. He also insisted on following the ban of polythene bags and avoiding dumping of plastic wastes in the water bodies.

The event in Madurai attracted participation from more than 5000 women, farmers, college and school students, and general public. A.Gurunathan, Director, Tata-Dhan Academy welcomed the gathering. M.P. Vasimalai, Executive Director, DHAN Foundation pointed out in his speech that the poor women organised by DHAN through the Kalanjiam Movement had saved ₹ 600 crore and mobilised another ₹ 600 crore from banks as loan. Today, these women are sharing their benefits with other poor women by way of their philanthropic gestures.

B.T.Bangera, Managing Director, Hi-Tech Arai Limited appreciated the good work and intention of the SHGs of women and farmers in protecting River Vaigai.



**PUDUCHERRY**

R.Sreedher, Member, Screening Committee, Ministry of Information and Broadcasting, Government of India called for farmers and women federations to set up and run community radios, which is supported by the GoI.

S.Ahila Devi, Regional Coordinator, Madurai Urban compered and concluded the event with vote of thanks.

### **Sivagangai, Tamilnadu**

The Sivagangai Walkathon was conducted the first time this year; the rally was flagged off by the Sub-Inspector at Aranmanai. Nearly, 1,000 students from 18 schools and around 750 member farmers and Kalanjiam members actively participated in the Walkathon event chanting the Walkathons slogans; the participants of the rally walked around 2 km and reached the collector's office. The guests at the rally were D. Ilango, M.A., B.Ed., District Revenue Officer and G. Ilango, Project Director, TNSRLM, L. Vinodh Kumar, LDM; and Punjab National Bank Training Centre staff attended the function and shared their thoughts. The DRO insisted on clearing the Juliflora jungle in tanks, public places, and individual land. The LDM spoke on bank linkage and the relationship between NGOs, banks, and SHGs. The project Director of TNSRLM explained the TNSRLM project and the role of NGOs in development sector. The Punjab National Bank training centre staff explained the importance of Asola cultivation as a livestock fodder in dry season. All the guests encouraged the students to study well and maintain discipline for a bright future. Pambar Basin Vayalagam Mutual Movement leaders invited the guest J. Mohan who delivered the welcome address to the participants and Valli delivered the vote of thanks.

### **Cuddalore, Tamilnadu**

In Cuddalore, the rally was flagged off by Ravichandran, Inspector of Police from S. Mary Middle School and it reached Government Higher Secondary School, Manjakupam. The guest spoke on safeguarding the environment, the need to help the poor and downtrodden, health and hygiene. Velumani, District Coordinator, Swatch Bharath Mission, Thirumurugan, Branch Manager, Pudevai Bharathiar Grama Bank and T.Asai Thambi, Team Leader, DHAN Foundation were present at the rally.

### **Chennai, Tamilnadu**

In Kovilambakkam (Chennai), the community mobilisation was initiated recently with CSR support from Cognizant. (After the Chennai 2015 floods, Cognizant came forward to collaborate with DHAN.) The core theme "Community Financing" was well interwoven in the cultural programmes that captured the attention of the community. The cultural events helped to bring and retain a larger captive audience and interestingly focus on DHAN's ideals, Kalanjiam and community banking, community financing, farmers apathy and bankers empathy. The event was conducted with the participation of the community which was hardly about six months old. Sustaining the spirit of community participation in all developmental initiatives make it a model worth emulating even in a highly urbanised setup. Archana Kalyani, IFS, Director for Tamil Nadu Tribal Welfare Development Department, A.Umarani, CEO, Kalanjiam Foundation, M.Kathiresan, Retd GM, Indian Bank, V.Dayalan from DHAN Foundation, and S.Kanjana, Branch Manager, Pallavan Grama Bank participated in the event.

### **Mysore, Karnataka**

In Mysore region, more than 2,000 members participated in the walkathon event. Many department officials attended the walkathon rally and the subsequent event. The health department which has been conducting Haemoglobin test for all members through PHCs has planned awareness



programmes and health camps in the coming months. Officials from other departments have agreed for future collaborations with the federations in the region. The Kannada Cultural Department sponsored the cultural activities. M. Rangaswamy, DGM, Corporation Bank, Mysore; Basavaraj, District Health Officer; Dr. Vijayalakshmi, Professor, Food and Nutrition Department, at VC Farms Mandya, Radha, Deputy Director, Department of Women and Child Development; Povayya, Sub Inspector; H.Chinnappa, Department of Kannada and Culture; Anand, Thirumala Aashwini Nikethana Kalyan Mantapa, Somasundar, Joint Director, Agri. Department, and Arun, KVK, Mysore participated in the event.

### **Ramnad, Tamilnadu**

DHAN Collectives of Ramnad District (CALL Programme, KCBP Programme & DVDF Programme) had jointly organised the Mugavai Walkathon-2017. Natarajan IAS, District Collector flagged off the Walkathon from Aranmanai, the rally ended at Raja Higher Secondary School Ground. The district collector also walked along with the participants of the rally. The rally was organised to build awareness about the presence of Proposis juliflora and its implications and importance of its removal, conservation of water bodies such as agricultural tank, village pond and farm pond, implication on open defecation and need for the Individual toilet construction. More than 4,000 students and members from 16 Schools, 5 Colleges, the general public, Kalanjiam members, and Vayalagam and Meenava Kalanjiam members of CALL Programme, Movement Leaders of Kalanjiam, and Vayalagam and Neithal walked in the rally.

Suresh Babu, LDM shared that construction of toilets by each family is leading to prevention of open defecation and that it was a proud contribution to the Swatch Bharath Mission. Kumarasamy, APO, Mahalir Thittam, reinforced the need for the community contribution to the environment and the importance of individual toilets, implication of open defecation and need for conservation of water bodies. Students of Thassim Beevi Abdul Kader Women's College, Kilakarai performed a drama on the importance of removal of Proposis juliflora and need for conservation of water bodies such as village pond and agricultural tank. Navaneethan, District Coordinator,

Swatch Bharath Mission, Deenathayaalan, National Green Corps, Kumar, Environment Coordinator also participated in the event.

### **Nagapattinam, Tamilnadu**

In Nagapattinam, the rally was flagged off by P. Jhonson, Nagapattinam Municipality Commissioner and A. Chandrasekaran, BM, Bank of India. The rally started from Avury Thidal, and went through Devi theatre, Ansari hospital, LIC, and ended at Blue Star Thirumana Mahal, covering 3 km. Thomas Gerald, GM, LIC shared the importance of poverty reduction and how LIC is working towards ensuring the same. He promised to donate 1000 tree saplings towards the cause. A. Anuradha, MSc (Ag) Ph.D., Programme coordinator, KVK, Sikkal delivered a speech on low cost agriculture practices, trees and its importance, deforestation effects and climate change, role of youth in conservation of natural resources, etc. Dr. Krishnan, Professor, PAJANCOA, C. Muruganantham, BM, Corporation Bank and K. Subramanian, LIC, Tanjore; shared their thoughts. Before the walkathon, competitions such as essay and poetry writing and drawing were conducted at school level focusing on the importance of donation and poverty reduction.

### **Salem, Tamilnadu**

At Salem, 750 Kalanjiam women and 400 school students participated in the walkathon rally that started from Asthempatti, Muniappansamy temple and ended at the Vijayaragavachari Mahal.. Sivarani, Regional Coordinator recounted the earlier walkathons and briefed the participants about the current theme. She explained why we need to address development issues such as anaemia, community health, open defecation and collaborate with departments to ensure last mile linkages. Udayakumar, LDM in his remarks emphasised the need for keeping our environment clean. C.R. Gobikrishnan, DGM, Indian Bank stressed the need for having individual bank accounts and ensuring education for the girl child. He also asked Kalanjiams to make efforts to enroll left-out socially deprived people as members. He also highlighted the importance of using loans effectively. M. Santhosh Kumar, GM, Pallavan Grama Bank, Ramakrishnan, LIC, and N. Sivakumar, Environment Coordinator also participated in the event.

# Prime Minister Fasal Bima Yojana Crop (PMFBY) Insurance Scheme Challenge or Opportunity?

Gayathri S\*

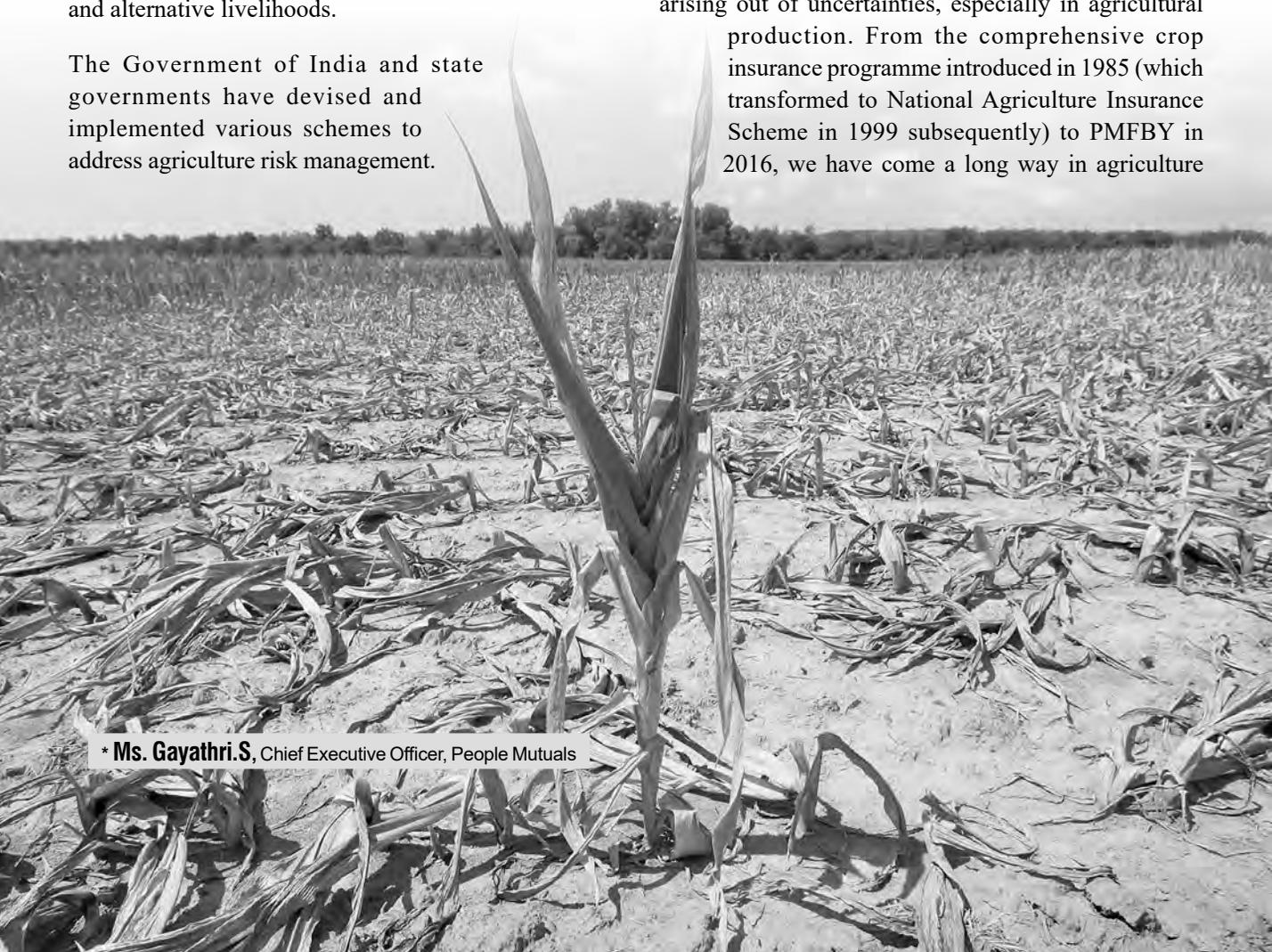
Agriculture in India is a gamble against nature. It is an adventure filled with unexpected twists and turns. There are several risks and uncertainties in different phases of agriculture, from production to marketing. There are numerous factors that contribute to these risks. They include variability in weather, frequent natural calamities, issues related to access to institutional credits, quality and timely availability of inputs, timely solutions for cropping-related issues, limited storage facilities, inadequate rural infrastructure facilities, exploitative markets and so on. Farmers use a variety of formal and informal techniques to manage and mitigate risks which include the use of drought-resistant crops, reduced consumption, sale of assets, migration to other places and alternative livelihoods.

The Government of India and state governments have devised and implemented various schemes to address agriculture risk management.

They range from community development initiatives in 1952 to IRDP to National Rural Livelihoods Mission (NRLM) in 2011. On the other hand, pro-agriculture financial sector policies were introduced to increase the flow of credit in the agriculture sector. They include adaptation of priority sector lending norms by commercial banks, Kissan Credit Card, interest subvention scheme and debt waiver scheme. Initiatives such as relief measures against natural calamities have been undertaken by the state with the view of supporting farmers to mitigate risk.

Many schemes were introduced in the insurance sector as well to protect the farmers against financial losses arising out of uncertainties, especially in agricultural production. From the comprehensive crop insurance programme introduced in 1985 (which transformed to National Agriculture Insurance Scheme in 1999 subsequently) to PMFBY in 2016, we have come a long way in agriculture

\* Ms. Gayathri.S, Chief Executive Officer, People Mutuals



insurance. While newer versions of the insurance schemes have imbibed new knowledge gained from past experiences making use of prevailing technological breakthroughs, some of the challenges continue to remain unaddressed.

This article tries to highlight what is improved and what remains unchanged with respect to the PMFBY scheme. The comparison is largely with its previous version of the National Agriculture Insurance scheme (NAIS). An attempt is made to study the role of various stakeholders to work on the challenges to promote further improvement. The central government announced PMFBY in January 2016 and the programme started with Kharif 2016 (July-September). The scheme involved huge premium subsidy by the government (central and state in the ratio of 75:25). The premium was capped at 2% of the sum Insured for Kharif season and 1.5% for Rabi 2016 for the field crops. It is 5% for the annual commercial crops for both the seasons. While the actuarial premium of some of the crops was estimated to be even 30% of the sum insured, the burden of farmers has been drastically reduced by way of premium subsidies. This is one of the welcome features benefitting farmers. Although the previous scheme of NAIS had premium subsidies, the premium varied from crop to crop making it difficult for the farmers to understand and plan.

Secondly, in PMFBY, the estimation of yield loss is done through crop cutting experiments (CCE) at revenue village level instead of Firka level as in the case of NAIS. Like the previous NAIS scheme, PMFBY is also an area-indexed programme. The unit area for yield estimation was Firka, which comprised 15 to 20 revenue village and even more in some cases. In the previous scheme of NAIS, the CCEs were taken up at Firka level and average yield of Firka was considered as the standard yield for all the revenue villages within the Firka. However, due to the variation in soil type and climatic conditions, topography, etc., there were huge variations in the yields of different revenue villages in the same Firka. This was a disadvantage for the farmers, especially small/marginal farmers practising rainfed farming. The current PMFBY programme assures four CCEs in each revenue village for each crop. Thus, the average yield of the revenue village would be more likely to be representative of the yield of the farmers in that revenue village.

Thirdly, the PMFBY allows the leasee and tenant farmer and share croppers also to get protected under this scheme. which was not available in the previous NAIS scheme. Fourthly, PMFBY covers five types of risks – prevented sowing, failed sowing, mid-season adversities, yield loss and post-harvest losses. However, the conditions for availing such benefits are found to be more complex except for the risk of protection against yield loss which is decided on basis of the CCEs. For other risks, the estimation of loss is to be decided by the District-Level Planning Committee (DLPC) constituted for this purpose. The effectiveness of these triggers could be better known only after observing the outcomes of the scheme for few more seasons. While the above can be considered as positive changes, PMFBY is faced with many challenges too.

The scheme largely relies on the land and cultivation records of the revenue department. Ultimately, it boils down to the level of village administrative officer (VAO) to register the crop cultivation details and issue the certificates (Adangal certificate in Tamil Nadu) to the cultivating farmers as the proof of ownership/tenant rights. However, it is a well-known fact that these records are not properly updated. This is also due to the fact that the maintenance of other revenue records of the village and issue of birth/death certificates and community certificates, etc. are all to be done by the same VAO. Equipping the village office with competent personnel and undertaking other measures such as digitisation of revenue records through the e-governance initiatives have to go hand-in-hand to achieve a hassle-free process including the insurance. In this background, it has become almost a common norm for farmers to spend money for obtaining the required certificates from the village administration which is a real dampener of PMFBY.

Secondly, as stated earlier, the scheme aims to assess the yield loss through revenue village-level CCEs. Take an example in the state of Tamil Nadu with about 17,000 revenue villages, at least 68,000 CCEs have to be conducted for just one crop. The total number of CCEs required may run into lakhs. With some of the revenue villages having more than 5 notified crops, we can imagine the volume of human labour needed to conduct these CCEs. However, neither the state governments



nor the central government shared any plan about how they are going to complete such a herculean task. The PMFBY scheme document of the government had stated that technology such as satellite imageries would be used for assessing the yield in future. (This again needs to be analysed, may be in a separate article.) But for now, the issue remains unaddressed.

Conducting CCE is ultimately vested with the agriculture officers (on behalf of Department of Agriculture) and village administrative officers (on behalf of Department of Revenue). From our field interactions, we could see that only the existing manpower is being used for this task which raises serious concerns on the quality of CCE conducted. CCEs are more important for determining the claim amount of the farmers insured in the prevailing season. Also, it has a say in the future claims as the threshold yield is determined from the average yield data of the last 7 years.

The next challenge is related to the compensation under several risks criteria. As stated earlier, risks such as prevented sowing and mid-season adversities require action to be initiated by the district-level planning committee comprising district collector, District Revenue Officer (DRO), Joint Director of Agriculture (JDA) and other line departments. However, the decision-making process is not clearly stated and remains highly vague. Claims under other risks such as failed sowing and post-harvest losses require the affected insured farmers to initiate the process of claim. It requires that the crop should remain in the field and not even be transported to the threshing yard or to any shade. There are no clear data yet on the occurrence of such events and whether the farmers could report to the DLPC and subsequent action taken by DLPC and the timeframe for response. However, it could be understood from the fact that it requires DLPC members to visit and estimate the loss in the field, which poses challenges such as timely response and additional manpower requirement to carry out these



sporadic tasks. The clause that the produce has to remain in the field until the assessment of loss is carried out by DLPC is not practical as the farmers would always attempt to save whatever they can.

In some of the revenue villages, farmers complained that some of the extensively cultivated crops are not notified by the government. The thumb rule for notification is that the crop should have been cultivated in more than 20 hectares in the previous season. However, since the cultivation records are not properly maintained and in practice, the land under cultivation is recorded as land left fallow favouring the real estate.

Finally, there are voices being raised from several parts of the country demanding a solution against the menace of wild animals. It is imperative that an efficient solution with a mechanism to differentiate the menace caused by wild animals needs to be formulated adequately.

The government's report on the performance of PMFBY shows significant increase in terms of number of farmers covered, extent of crops covered and total sum insured.

“The performance this season has improved by 18.50% in terms of farmers coverage, 15% in terms of area coverage and 140% in terms of sum insured in comparison to Kharif 2015, which happened to be one of the worst drought affected seasons when the number of farmers covered was 309 lakh (22.33%), total coverage area was 339 lakh ha. and sum insured was ₹ 69,307 crore. Furthermore, there has been a quantum jump of more than six times in the coverage, of non-loanee farmers from 14.88 lakh in Kharif 2015 to 102.6 lakh in Kharif 2016.” Source: Press Information Bureau, Government of India, Ministry of Agriculture

Despite the delay in announcing the cut-off dates, the government claims that the coverage in Kharif 2016 is higher than Kharif 2015. The same might be expected in Rabi 2016 also. As the enrolment is still in progress for Rabi 2016, a clear picture would emerge by March or April 2017. Since more farmers are purchasing this policy including non-loanee farmers, it is important to see that appropriate measures are taken up by the government agencies, insurers, and civil society organisations to resolve the challenges related to the enrollment in the scheme as well as claim. So, the government has to create mechanisms in tune with the promises made in the new features of PMFBY. This becomes a great cause of concern for the farming communities and civil society organisations advocating efficient social security measures. The involvement of private insurance companies to administer the scheme has put the scheme in jeopardy. If the claim process, especially the yield loss assessment is not properly done, it would result in poor claims, thus favouring the insurers (both private and public owned) at the cost of public money in the form of premium subsidy.

Although it is hard to judge the success of the new version of agriculture insurance with just the passage of two seasons, the governments should show their intent to initiate action to address the challenges that are obvious. This is a crucial step that would determine the success of risk management strategy in the form of PMFBY in the future.

# Pradhan Mantri Bharatiya Janaushadhi Pariyojana

## Quality medicines at affordable prices for all

Palaneeswari M\*

The Indian pharmaceuticals market is the third largest in terms of volume and thirteenth largest in terms of value, as per a report by Equity Master. India is the largest producer and provider of generic drugs globally. The Indian generics pharma industry accounts for 20% of the global exports. The Indian pharma industry is expected to grow to ₹2,45,669 crores by 2020.

The pharmaceuticals Industry in India has evolved from mere ₹1500 crores in 1980 to more than ₹1,19,000 crores by 2012. Yet, the market in India is dominated by branded drugs, which are sold at premium rates. It is to be noted that 80% of outpatient care and 60 of all clinical treatments happen at the private healthcare centres. According to National Sample Survey Organisation (NSSO) estimates, up to 79% healthcare expenses in rural areas arises from the cost of the medicines. Thus, access to low-priced generic drugs is very critical in ensuring health care at affordable prices.

Ensuring availability of quality medicines at affordable prices to all has been the key objective of the Department of Pharmaceuticals, Government of India. Hence the department has decided to launch a nationwide campaign viz., Pradhan Mantri Bharatiya Janaushadhi Kendra.

Jan Aushadhi is a novel project launched by Government of India in 2008 for the noble cause of Quality Medicines at Affordable Prices for All. The campaign was undertaken through sale of generic medicines through exclusive outlets namely “Jan Aushadhi Kendra”(JAK) in various districts of the country. The first “Jan Aushadhi Kendra” was opened on 25 November 2008 at Amritsar in Punjab.

Initially, the implementation of Jan Aushadhi campaign was envisaged during the 11<sup>th</sup> Five year plan period

starting from 2008-2009, with the target of at least one Jan Aushadhi Kendra in each of the 630 districts of the country, and further to be extended to the sub-divisional levels as well as major towns and village centres by 2012. It was planned that the scheme would run on a self-sustaining business model, and not depend on government subsidies or assistance beyond the initial support. It was to be managed on the principle of “No Profit, No Loss”

### Mission

1. Create Awareness among the public regarding generic medicines
2. Create demand for generic medicines through medical practitioners
3. Create awareness through education and awareness programmes that high price need not be synonymous with high quality.
4. Provide all commonly used medicines covering all the therapeutic groups
5. Provide all the related healthcare products too under the scheme

### Implementing Agency

BPPI (Bureau of Pharma PSUs of India), under the administrative control of the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Government of India is the implementing Agency of PMJAY. BPPI was established under the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Government of India, with the support of all the pharma CPSUs for coordinating procurement, supply and marketing of generic medicines through the Pradhan Mantri Jan Aushadhi Kendras. In April 2010, BPPI was registered as an independent society under the Societies

\* Ms. Palaneeswari.M, Team Leader, SUHAM Trust



## Responses from hospital staff on the medicines

Vadamadurai clinic is running is an outpatient centre at Vadamadurai itself. Doctors themselves tested the diabetic drugs on their relatives. Metformin, a tablet for diabetics administered to the doctor's mother controlled her diabetes. Other kinds of drugs, ointments, syrups and gels had obtained good response. After proper volunteer evaluation with the support of the patients, we found that the overall response was good. Doctors informed the management that they could stock all the medicines in generic brands and ensure 100% safe usage of the same.

## Rate comparison of the drugs

The table shows how a patient out-of-pocket expenditure gets reduced through this initiative.

Complaints	Medicine Name	Quantity	JAS (in MRP)	Branded drugs (in MRP)	Branded Medicine at 12% discount (in SUHAM pharmacy)
Allergy	Albendazole tab	10	20.3	100	88.0
	Flucanazole tab	10	38	115	101.6
	Ivermectin	10	7	240	211.2
			<b>65.3</b>	<b>455.4</b>	<b>400.8</b>
Cold & Fever	Roxithromycin	7	21.41	65.45	57.6
	Paracetamol 650	9	4.86	16.2	14.3
	Ranitidine	6	5.22	4.32	3.8
			<b>31.5</b>	<b>86.0</b>	<b>75.7</b>
Pain killer	Diclofenac gel	2	27.07	120	105.6
	Paracetamol	15	8.1	27	23.8
			<b>35.2</b>	<b>147</b>	<b>129.4</b>
Wound	Mupirocin Ointment	1	39	94	82.7
	Flucanazole	3	11	34.62	30.5
			<b>50.0</b>	<b>128.6</b>	<b>113.2</b>

The above table shows that the generic medicines were available at 15-40% of the cost of the branded medicines. This provides the poor and the general public an opportunity to reduce their health expenses without compromising on the quality of health care. This affordability in turn will result in more institutionalised health-seeking practices which are not in practice at present.

## Status as on 31 March 2016

- Product basket contains 649 items (495 medicines and 154 surgical equipments and consumables)
- Medicines offered cover all the most commonly known therapeutic groups.
- Actions initiated to take this figure to 3,000 by the end of March 2017.
- Supply chain: From Suppliers – Central Warehouse (CWH) – Carrying & Forwarding Agents – Distributors – JAK
- BPPI has established a central warehouse at IDPL complex



- vi. Carrying & Forwarding Agents and 36 Distributors appointed to spread over different states/UTs
- vii. 500 Pradhan Mantri Jan Aushadhi Kendras spread over 26 states/UTs already commenced operations.

### Operational challenges

- 1) Delay in getting stocks from the CWH unit to the concern stockist.
- 2) Delay in getting stocks from the stockist at Chennai (He cited the above said point for delayed supply.)
- 3) Only one distributor is available for entire Tamil Nadu.(Sree Generics at Chennai)
- 4) Gaps in getting all the ordered stocks ( ordered stocks were damaged during transport, some of the ordered items not received from the stockist – Alprazolam

- 0.25 mg, Antacid suspension, Ciproflaxin, Monteloukest+ Levocettrizine, Iron syrup)
- 5) Availability of needed combination of drugs at the CWH (Metformin+ Glimepiride)
  - 6) Available stock also with short expiry – Levofloxacin 500 mg, (November 2016) Glimepiride (April 17)
  - 7) We are already using our own software, For JAS, we are using their software. We could not prepare bills for company drugs (those drugs which are not available at JAS) in JAS software.
  - 8) Dependency on the internet for software operations and services

Stockist is not keeping stock in sufficient quantity, which reflects that fresh stock is being delayed. It affects the regular purchaser who is demanding from the JAS stock.



## பிரதான் மந்திரி பாரத்திய மக்கள் மருந்தகம் PRADHAN MANTRI BHARTIYA JAN AUSHADI KENDRA



S.No. எண்	Drug மருந்தின் பெயர்	அளவு	Qty எண்ணிக்கை	Company Drug Price பிரைவட் மருந்தின் விலை	JAS Drug Price ஷன் ஓளஜாதி மருந்தின் விலை
1	Diclofenac Gel டைக்லோபினாக் ஷெல்	30/g கிராம்	1	69.50	17.41
2	Diclofenac Gel டைக்லோபினாக் ஷெல்	15/g கிராம்	1	50.00	9.66
3	Cotton Crepe Bandage காட்டன் கிரிப் பேண்டேஜ்	-	1	140.00	37.67
4	Paracetamol Syrup பேராசிட்டமால் சிறப்	250mg	1	35.28	10.19
5	Cyanocobalami Folicocid ferric ammounivm Chrate சைனோகோபாலமைன் போலிக் ஆசிட் பெரிக் அமோனியம்	200ml	1	97.00	17.26
6	Glimepiride metformin கிளிமிபிரைடு மெட்பார்மின்	2mg 500mg	15	93.00	22.00
7	Cefixime செபிக்ஸ்சிம்	200mg	10	89.04	74.70
8	Folicacid போலிக் ஆஸிட்	5mg	45	60.48	12.15
9	Atorvastatin அட்ரோவாஸ்டின்	10mg	15	80.00	10.00
10	Amlodipine அம்லோ டிபின்	5mg	10	11.61	3.24
11	Tramadol Inj ரெமடால்	2ml	1	27.00	6.32
12	Ranitidine Inj ரேனிட்டிடின்	2ml	1	3.38	2.66

# Custodians of the Land, Healers of the Earth

Frank Heckman\*



## Prologue

A breakthrough in science, knowledge and consciousness is beginning to unfold for all human beings. As we pay attention, we begin to experience life through new perceptions of a delicately woven interdependence, cluing us in to larger patterns and expanding our knowledge and awareness of continuous flow and change. As an abc, these larger patterns are helping us to better grow nutritious and delicious food for the world. Simultaneously, this awareness directs us to allow the natural world, our ecosystems to do what they do best: protect and regulate the biosphere.

The case I am making here is that there is a profound essence in the world's smallholder farmers, fisher folk, pastoralists, and forest dwellers. They are not just food producers, they are frontline custodians of biodiverse landscapes, with them lies the true regenerative power of our societies.

In this, the agricultural biodiversity community (abc) is playing an important role.

## Climate resilience

There were passionate discussions about the practices in the field, the shifting of the weather systems, droughts or floods in times and ways we have never experienced before. How delayed blossoming has a domino effect on many other factors and dimensions – From markets to production and of course the grave.

Ecological consequences. Solutions? Yes, in some cases, but foremost learning by doing and discovering through innovation and collaboration. And we find that traditional knowledge often carries a tried and proven adaptation potential.

Many indigenous practices are beginning to make more sense than ever – As one indigenous farmer said on the land where his ancestors had been for a thousand years:

‘Cross-breed? No! Leave the seeds alone, Mother Earth

\* Mr. Frank Heckman, Embassy of the Earth



Lali tending a tree-dwelling fern at the Sanctuary

## Gardening back the biosphere

We are entering Gurukula Botanical Sanctuary. In forty years of research and understanding, rescuing thousands and thousands of plant species, living with them, taught by them, they understand better than almost anywhere on the planet what these patterns are, and how we can put them to use.

They say: ‘We are not saving the planet. We couldn’t. What we are doing is to show humanity that people are capable of restoring, regenerating our natural habitat. We are conveying this idea, this awareness! And they know much more and we are learning from them.’

A small group arrived at the Gurukula Botanical Sanctuary, Western Ghat mountains an hour’s drive from Mamanthavadi, in the district of Wayanad, Kerala, India. This is the place where they ‘garden back the biosphere’ one of us whispered as we stepped into the tropical night of the rainforest under an immense star-bright sky.

We had just completed a four-day Working Conference of the agricultural biodiversity community in Wayanad. The abc is a worldwide network of supporters, promoters and practitioners of agricultural biodiversity, founded to share knowledge and experience, learn, co-create, collaborate and inspire.

This year’s gathering had its focus on sharing, exploring and really discussing the state of the Earth, the effects that Climate Change has on the practice of smallholder farmers, pastoralists, fishermen and forest dwellers – men and women – and what we are currently doing to adapt, mitigate and seek climate resiliency.

will take care of the breeding.’ He opened his hand to show us seeds with a 500-year history.

## Living Earth

Most importantly, a larger picture started to emerge from the conversations. We are not only producing food in a climate responsible way, we may in fact be a substantial part of the solution to climate change. With our core values around biodiversity, the community-based approach to food production and the effect that more than two million smallholder farmers, pastoralists, fisher folk and forest farmers can have on our living Earth.

Gurukula Botanical Sanctuary played an important role for the abc to conduct its annual meeting in Wayanad. Their clear ideas on biodiversity, ecosystems, plant life and the biosphere totally matched with this year’s focus on Climate Resilience and Agricultural Biodiversity. They hosted a field trip of a group from the abc on the first conference day.

## In the garden

The early morning air is impregnated with fine mist and cool damp. On the ground, dew drops glisten on blades of grass and many other greens. ‘This is really a refugee camp for plants’, she tells us. We painfully realise once more that humans are driving species into extinction with a speed as never seen before. ‘If we can arrange



The morning walk with Suprabha



One of the many species of delightful frogs that inhabit the diverse habitats at the Sanctuary

their temporary habitat here, then, if we can keep them for 10 years, who knows what can happen next! These plant refugees live on borrowed time.”

### **All beings are sacred**

The increase of the population, migration from other areas, cultivation of tea, coffee, rice and other crops shifted the balance of the ecosystem in this part of the Western Ghats. The impact on the natural habitat of these rainforests started to accelerate during the eighties of the last century.

It was Wolfgang Theuerkauf [1948–2014], a young German from Berlin living as caretaker of a small piece of land in this wilderness – nearly forty years ago, who noticed the changes in the environment. And he started to take action. His ‘search and rescue’ operation of the ‘last species’ became his ‘calling’. He created the Gurukula Botanical Sanctuary in 1981, with the help of a small

group of very dedicated women, local, some indigenous, and sometime later with the commitment of Suprabha Seshan. Gurukula Botanical Sanctuary sees itself as a community of people, animals and plants, in which all living beings are sacred. The focus, however, are the plants. They say: ‘Plants work harder than the mightiest governments on Earth. They give us free food and water.’

### **Zooming in and out**

Zooming in on the facts, this is what the Gurukula team is really saying: 245 million people depend on the rivers that come from these mountains. And the rivers depend on these forests. And the forests need their plants. Without plants – trees clothed in epiphytes and grasslands at high elevations – monsoon clouds will not release their moisture. Without plants, water will not sink into the land to feed the rivers, sources and aquifers, nor will the local thundershowers form, and so on.

Zooming out. The entire planet, the whole Earth works this way, just as in the Western Ghat mountains. Living beings, plants, trees, animals, rivers, the skies above and much more are deeply connected, fine tuned, self-regulated through continuous communication, balancing and protecting all life on Earth.

### **Dynamic global network**

Songs, tweets and twitter from the many feathered friends, in all sizes, whose songs are often new to me. Crickets take their part in the rain forest orchestra, chirping in unison. The lush growth of ferns, flowers and mosses and many other kinds of vegetation cover the grounds, stones, stairs and walls. ‘Plants manage to grow almost anywhere’, Suprabha tells us: ‘Look at this tiny fern on this flat rock surface, managing to grow. A crack and a bit of moisture.’

Plants are the primary life support system of the planet, not in the intellectual, categorical or ‘plant as object’ sense. Not in the scientific paradigm, but more holistic, as a huge sanctuary, a community of many plant families that continuously exchange energy and communicate. Sharing intelligence about numerous things such as temperature, moisture levels, mineral counts, nitrogen, density of the population, threats, life and death. The plant world is a world-wide community, very much alive, whose role on the planet is not destined to please man, but to balance, manage and protect the biosphere, to create a homeostasis in the dynamics of the ever changing environment.

### **Human intervention**

Disrupting and destroying the plant universe was a grave mistake. Of course, humans need to feed themselves. And yes, the world population has increased tremendously in only two generations.

So intrusion and taking what’s needed from our natural habitat is self-explanatory. Our ancestors knew, as being part of this large ecosystem, how to proceed in collaboration, outweighing the pros & cons, restraining when needed. We can’t go back to the ‘good old times’, but new technologies, innovative thinking and traditional ways can open up a new world.

When people moved away from this inclusive awareness of their habitats and began to dominate, domesticate and design large-scale food production systems, the Plant Life on the planet suffered.

The Industry and Agroindustry inflicted great wounds and cuts in the global plant network frustrating communication, obstructing recovery of the soils, degrading land into deserts, amputating plants innate ability to regulate and protect the biosphere and with it, good living for all beings.

### **Small is beautiful**

I strongly believe that Rex Weyler, co-founder of Green Peace made no mistake when he said at a gathering with Earth Keepers – and Organic Farmer(s) – from all around the globe:

*‘We are at the eve of a planetary breaking point, a point on no return. When such a shift occurs, systems shut down with catastrophic consequences and there is nothing humans can do to reverse it.’*

What we understand of the natural world now, how ecosystems self-regulate, there is a limit to size. The amount of land we can take out of, extract from nature. Too large disrupts the ecosystem, regardless of practice. Ernst F. Schumacher – Small is Beautiful, Economics as if People Mattered – just like Wolfgang Theuerkauf had a deep understanding of the principle of size and scale. Small allows, doesn’t break up, natural systems to do



A spectacular catarpillar on a small twig



A Longhorn beetle on the forest floor at the Sanctuary

their 'work'. For the abc says: 'Small scale farming, at best agriculturally biodiverse, organic or eco-agricultural is the name of the game.' It allows the natural world, specifically the plants on the planet to stay attuned and connected to protect and safeguard the biosphere.

It is good to emphasise here that Indigenous peoples are a vital part of the solution to restore our sacred relationship with our rapidly changing ecology. Eighty per cent of our last pristine nature here on Earth has been cared for and protected by generations of Indigenous peoples' knowledge, experience and wisdom. Many times, until this day, under severe attack from extraction policies from nation states and corporations! Always with a strong spiritual connection to the Mother Earth, they take their stance and protect her.

### **Deep listening and the two-fold gaze**

We are standing on an elevated area in the sanctuary looking into the valley below. A whole spectrum of

multiple shades of green! In the stillness we sense our feet on the ground, a gentle breeze stroking our face, the sweet smell of flowers. Then, one bird's song resonates across the valley, filling up the entire space. In that very moment, we all feel the overwhelming beauty and great mystery of this awesome place...

Suprabha pauses, then points to the hundreds of different species of orchids, hanging on moss covered bark sheets, stitched on with tender micro-surgical precision. 'Rescued from somewhere in the West Ghat Mountains, the last specimen of its kind on Earth, she explains, 'What we work on is not just the plant, but its entire local habitat – direction, altitude, level of moisture, 'companion' tree, soil, pollinators, neighbouring plants, trees, animals and more.'

It's like a two-fold gaze, seeing a dewdrop on a blade of grass and the whole of Mount Anamudi, at the same time! By recreating that very specific habitat in the sanctuary

that we are enabling these plants to live here. Makes sense! Easy? No, forty years of learning through trial and error, learning by doing.

‘We carefully document everything we see and observe.’

### **Uniquely gifted**

*‘We often say we are a refuge camp for plants under attack, they kind of live on borrowed time.’*

Is this the end game? Must be a frustrating experience! ‘No, not so!’ The amazing thing is that when plants grow back, they are ultimately creative. They’ll find ways, as I showed you before, to root in many places, mosses do this with great ingenuity. In the surge, plants are perfect team members and will climb on each other’s back to further growth. Plants have an enormous regenerative drive, are highly self-organised and regulated.

So, the good news is that humans are not only a destructive species. Among all animals, they are uniquely gifted in tending their environment, the gardening species. Degraded areas on the planet can, when there is enough moisture and the right kind of care, restore themselves. The limitless diversity of the plant world is really the key to a balanced biosphere. It can under most circumstances adapt to keep planet Earth relatively stable and cool.

### **Unity in biodiversity**

Biodiversity is key, but the real secret lies in the notion of unity. A pattern that connects, an organising principle, an implicit design. But even more! As science is now telling us of the living plant world, the way trees relate and communicate. Through miles of fungi, connecting root systems among plants and trees, through organic matter carried by the winds, pollinators, animals. Through the flow of water, permeating all beings.

Plant world seems to be a working ‘holoversum’. A delicately woven interconnectedness, in which each part reflects the whole as in a hologram. With a collective intelligence, the whole organises all the parts. Just think about what is often described as the butterfly effect; stirring things up in one place may cause a tempest on the

other side of the planet. If any comparison at all, this plant web is far beyond and with much greater sophistication than what we call our ‘cyberspace’.

If we would extract, take out some of the major, key parts of our internet environment at this moment, our geo-political world will tumble into disastrous vortex before the end of the day! Isn’t that what we are doing with our Earth, take out major, key parts of the interconnected natural system, debilitating its functioning?

### **How we conspire**

‘It is a rare fish that knows it swims in the water’, as the saying goes. Not at all at odds with how we are operating in our abc and thus the villages, communities, families of farmers, fisher folks, pastoralists, forest dwellers around the globe where the hand meets the soil, the waters and the trees and animals. Our focus may very well be on ways to sow, grow, harvest, bring to market, supported in the best possible way, but at the same time if we zoom out we are all conspirators, that is, conspire. We breathe together. ‘Hard-wired’ to learn together in a social context that amazingly much resembles the primordial communities. An ample two hundred years of industrial revolution and a couple of decades of increasing individualism won’t change that.

Indeed, all the people, who are in the fields, forests or on the waters know about the changing climate. How would they not know. It’s their daily experience, for years already, but it’s getting more severe. Harvests shifting, wells drying up, seeds under-performing, overfished seas, weather systems changing, and more. And they are adapting, of course they are, they always have. Do they always have the right solutions? Or the right knowledge?

### **Custodians of Nature – Healers of the Earth**

We can only see patterns when we zoom out and meet others looking for similar solutions. And to be prepared to share the knowledge and experience. The point here is that those who practice agricultural biodiversity, with their choice of small holder farming, a community-based approach, do more than producing healthy and cost-effective food. They have always been, but more so driven by the challenges of climate change, working



Women planting epiphytes

for the Earth. Taking care if the soil, variation of species, by living in harmony with their natural environments they are actively supporting the natural world to restore, protect and balance the biosphere. And there are many smallholder farmers, fishermen, pastoralists and forest farmers. Only in our abc, we are related to more than two million people.

They are indeed the frontline Custodians of bio-diverse landscapes, and in respect, Healers of the Earth!

### **The natural way, learning through attention**

On a personal note. My encounters with Nature are often like a shift in awareness. By which I mean a certain state of attention. I live in a forest in the Netherlands with big tall trees, Spruce, Pine, Oak Tree and many more. When I take the thirty-minute walk through the forest to the small railway station I almost immediately feel the presence of the trees. I greet them as family members, naturally, and they greet me back through the wind rustling through the tops, the fragrance, all of that. My indigenous friends understand this, as they communicate similarly and call it the 'natural way'. When I was in the Western Ghat Mountains last summer I sat quietly in the 'orchid nursery' while Suma, one of the eldest in the Gurukula team, was tending the plants. And then I saw it. She was in that state of effortless concentration, relating to and learning from the plant, accessing knowledge, letting it guide her actions. It is this kind of 'direct knowing' that we often lack, but which is now more needed than ever.

It is a capacity we humans all have and many of the people working on the land will recognise this. Musicians know this, artists know this. We just have to remember that we are all indigenous to this Earth. Through immersion, just by being with nature, this capacity to relate and learn is activated and through use, strengthened.

### **Last words**

Maybe we should hear one more time what Wolf-gang Theuerkauf and the Gurukula team say: 'Plants work harder than the mightiest governments on Earth. They give us free food and water.'





## Gurukula Botanical Sanctuary

**G**urukula Botanical Sanctuary is a garden of wild plant species grown at the edge of a rainforest reserve. It has rehabilitated endangered species and restore habitats in a highly fragmented landscape of 55 acres over the past forty years. Situated in the Western Ghats mountains in Wayanad, Kerala it houses 2,000-3,000 species of plants, of which 400-600 belong to this land, are here of their own accord; another 1,600-2,000 species of plants, belonging to these mountains and the reliant fauna are a treat to nature lovers.



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