September 2017

Development Matters

Monthly Development update from DHAN Collective

Feature

Building Resilience for Sustainable Development

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The biggest success of Indian agriculture has been its ability to be self-sufficient in food grains. However farmers, especially the small and marginal farmers are on the verge of either becoming incompetent in the market or find themselves in a captivate position under local buyers or village level brokers. These constraints bring out the need for local collectivisation of farmers. Collectivisation helps in introducing economies of scale, bringing down the input costs, better bargaining power and magnifies the voices of farmers as collective voice. FPO's are the key to address the issues of production and marketing of unorganized farmers through collectivization.

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From the Editors' Desk

Dear Readers,

Greetings from DHAN Foundation.

This September issue focuses on Madurai Symposium 2017, a biennial event organised by DHAN Foundation on the theme of Building Resilience for Sustainable Development. Building resilience is one of the crucial challenges in the context of achieving the Sustainable Development Goals (SDG). The Symposium enhanced our understanding of the dynamics and nuances of how these communities prepare themselves and build resilience through collective action. The event helped to showcase and learn from successful resilient practices. Communities have instigated mitigation and adaptation practices to combat challenges through opportunities and build resilience. The articles capture the broader perspectives and experiences in building resilient communities through thematic intervention.

We welcome your suggestions and feedbacks on the articles featured in the development matters. Please write to us at *dhancdc@dhan.org*

Happy reading!

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Symposium on Building Resilience for Sustainable Development

> “Madurai Symposium 2017, created a platform for the development stakeholders, who have attended over 54 events comprising people conventions, conferences, seminars, and workshops. Symposium helped the participants to share and learn from each other’s experiences and practices and explore opportunities for collaboration.”

Development stakeholders gather biennially at Madurai for “Madurai Symposium 2017” organised on the theme of **Building Resilience for Sustainable Development** to share, learn from each other’s experiences and practices and explore opportunities for collaboration. The symposium attracted diverse stakeholders in development: Community Organisations, Civil societies/ NGOs, Government, Banks, Insurance Companies, CSR Foundations, Donors, Philanthropists and Academia. Given the multifaceted development goals of Sustainable Development Goals (SDG), the Madurai Symposium 2017 had attempted to connect with the critical element of challenges in sustaining development processes towards achieving the goals. Building resilience is one of the crucial challenges and Madurai Symposium 2017 seeks to engage with the topical theme in the context of SDGs.

Appreciating resilience in the development context

Globally, it has been recognised that development process would not be sustained, nay, stalled or even retarded due to lack of resilience. Resilience is the ability/capacity of the people, households, communities, countries to cope up with shocks and stresses through mitigation, adaptation and quickly recover in order to reduce chronic vulnerability and enable sustained development, inclusive growth and learning and transformative capacity. Building resilience is a progressive and long-term process that goes beyond humanitarian relief

and development investment by addressing a wider set of inherently connected challenges that collectively prevent communities from achieving and maintaining development gains. It is obvious sustaining Post SDGs hinges on inherent buildup of resilience. Among the SDGs, from the perspective of resilience having larger impact in achieving the goals, the following themes rank high in the pecking order of priorities.

- Social capital for building resilience
- Resilience in agriculture eco-systems
- Resilience to cope up with climate change
- Resilience in disasters

These themes have been so closely inter-related in terms of cause and effect, the complementarities of resilience building among these interconnected themes presents interesting challenges and opportunities.

Social Capital for building Resilience

It is quite evident through ages that communities getting organised and pulling together have demonstrated greater coping capacity to meet the challenges stemming from natural disasters, hazards, catastrophes, etc. In relative terms, among the communities, those endowed well economically have been able to show greater resilience to bounce back to normal. The poor being more vulnerable to shocks/stresses, the imperative of being organised and building larger social capital base cannot be overemphasised. Self-Help Group movement of poor women, for instance, has shown greater resilience in coping with risks and vulnerabilities in so many different ways in different contexts. These experiences when shared at the Madurai Symposium would enhance our understanding of the dynamics and nuances of how these communities prepare themselves and build resilience through collective action.

Resilience in Agriculture eco-systems

Farming is faced with multifarious risks and vulnerabilities than any other economic activity and building resilience is an indispensable part of this activity to make it a viable proposition in a sustainable way. In fact, the

Goal-2 of SDG recognises this critical importance and emphasises promoting sustainable agriculture. In view of multiple dimensions of risk elements in agriculture, the challenge is greater as resilience has to factor in many imponderables. Foremost among them is natural elements with erratic rainfalls, prolonged droughts, increasingly high incidence of pests and diseases, followed by cultivation practices such as excess application of essential inputs, nil/low diversity in cropping pattern, etc., compounded by the market shocks, Building resilience is a sine quo non for sustainable agriculture and each of the ecosystems in farming be it wet-land, rainfed or coastal. call for understanding and evolving unique resilient practices. The Madurai Symposium sets the stage for showcasing successful resilient practices in different agriculture eco-systems.

Resilience to cope up with Climate Change

Despite voices of climate sceptics, there is an overwhelming global acknowledgement that climate change is real and happening with its known and unknown consequences. It is widely acknowledged that human activity and excesses associated with that, particularly the energy sector, is the key trigger that induces climate change and its harmful consequences. On the other hand, climate change has widely disrupted the existing pattern of rainfall, temperature, etc. Green gas emissions induced through anthropogenic activities have been compounding the global problem. Communities and countries have launched mitigation and adaptation practices to combat climate change and build resilience. Many communities follow exemplary practices which compel the attention of policy makers, industries and governments. Effective and proven practices in coping with climate change challenges by different stakeholders including farming communities would be shared in the symposium.

Resilience in Disasters

Disasters, be it natural or man-made have frequent visitations than before leaving behind a trail of destruction and despondency. There has not been wider appreciation, of going beyond rescue and relief, reconstruction, about the critical importance of the resilience in disaster hotspots. In other words, building resilience has not been a deliberate process inherently woven with reconstruction and rebuilding lives. A global disaster response framework namely “Sendai Framework” has been evolved by the United Nations which guides the process of building resilience. In the recent past, wherever disaster struck, attempts are being made to make the resilience building among the disaster affected communities a process of rebuilding the livelihoods as in the Phailin disaster in Odisha and Hud-Hud in Andhra Pradesh. There have been similar experiences in different types of disasters and the symposium is the platform to present such experiences for sustaining development in disaster-prone areas.

Conferences, Seminars and Workshops

We have highlighted a few areas of building resilience here in order to sustain the development and attain some of the sustainable development goals from the varied ecosystems in the Indian context. There exists an imperative need to understand the level of

vulnerabilities and risks met by different social strata in different contexts, coping mechanisms practised by them, necessities for preparedness, and capacity building of bottom of the pyramid to make them resilient communities. In the Madurai Symposium 2017, development stakeholders would get platforms and opportunities for deliberating on the issues of building resilience in many conferences, seminars and workshops. Needless to say, these knowledge events would provide a stage to facilitate cross-learning through best practices, traditional coping mechanisms, veracity of impact of disasters and hazards on poor, research outcomes, etc.

People Conventions

As the resilience challenges are multifold and specific to region as well as context, the organisers of the symposium intend to involve the major stakeholders in building resilience process viz. community of women self-help groups, small and marginal farmers representing different natural eco-systems, fisherfolk, landless, etc. The conventions aim to elicit the experiences of these community stakeholders through dialogues, round-table and focus group discussions which ultimately result in greater learning that has to be drawn from those experiences for building relevant resilience for sustaining development.

Contributors

The five-day event has brought together NGOs, academic and research institutions, government organisations, industries, banks, donor organisations, entrepreneurs, producer companies and cooperatives to host conventions, seminars, and workshops and conferences on topics relevant to the theme. Totally, 54 events comprising people conventions, conferences, seminars, and workshops were organised as a part of the event. In this edition of Development Matters, efforts were made to capture the perspectives and approaches of DHAN's various initiatives and the way ahead in terms of development partners and the community expectations.❑

Water Resources Development for Resilience Building

Venkatesan N*

Environment Setting and Background

South Asia is considered to be highly vulnerable and susceptible to the environmental changes amidst monsoon vagaries, natural disasters such as cyclones, floods and droughts, because of its large population, predominance in agriculture and limited resource base. As the globe faces continuous threats from the Climate Change Phenomenon, the irrigation sector will be affected to a large extent and thereby needs changes in the effectiveness of irrigation methods. The UNFCC framework has predicted increased variability of precipitation, which includes longer drought periods, would lead to an increase in irrigation requirements, even if the total precipitation during the growing season remained the same. Hitherto, wherever precipitation increases significantly during the growing period (due to climate change), net irrigation requirements could decrease. The overall irrigation demands could become even higher. Hence, water storage is considered more important in the future to conserve the flood waters obtained from intensified rains due to climate change.

Small and medium reservoirs offer considerable scope to adapt to the climate change so that agricultural biodiversity and ecosystems could be sustainably conserved. During floods, they offer scope to store the excess water, and allow for both irrigation and groundwater recharge during times of water shortage. As these reservoirs are distributed across the landscape, they capture more of the water, and provide more local control compared to a few large reservoirs.

India has an extensive network of existing small and medium reservoirs, called tanks, some dating back to centuries. The experience from irrigation tanks and water harvesting structures, illustrates both the potentials and challenges of this adaptation response as resilience building. Although, there are over 208,000 tanks in India, irrigating about 2.3 m.ha., the net area irrigated by tanks has declined by 27% between 1990-91 and 2009-10. This article will cover the challenges being faced by tank irrigation and examines options for improving their performance such as revenue mobilisation through multiple use of tanks, augmenting groundwater resources in the tanks, tank sluice management, integrating social forestry and desilting, and tank modernisation, to enable these systems to meet increasing needs for water storage under climate change and resilience building. Since small and marginal farmers account for majority of tank

Table: Net Area Irrigated by Tanks

No.	States	No. of tanks	% of total tanks	1990-91 Area irrigated (m.ha)	2008-2009 Area irrigated (m.ha)	% area decline in 18 years
1	Andhra Pradesh	60,745	29.15	0.97	0.84	13.40
2	Karnataka	20,152	9.67	0.24	0.21	12.5
3	Maharashtra	12,539	6.02	0.31	0.28	9.68
4	Tamil Nadu	39,366	18.89	0.53	0.49	7.5
5	Sub-total	1,32,802	63.73	2.05	1.82	11.22
6	Other states	75,579	36.27	1.19	0.65	45.38
	All India	**2,08,381**	**100.00**	**3.24**	**2.47**	**23.76**

Source: Dr. K. Palanisami, IWMI –Tata Water Policy Programme (October 2012)

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farmers and cultivate about 70% of the lands in the tank irrigation systems, sustaining the tank irrigation potential is highly warranted.

Resilience Building through Small Scale Water Bodies - DHAN's 25 years experiences

DHAN Foundation is working towards water resource development with a community-owned approach using the nested people institutions model to build a resilient community, particularly the small and marginal farmers against the risks and vulnerabilities caused by climate change and other issues. DHAN has evolved innovative practices through its 25 years of experiences with the community to identify the interventions, test them in the field and then scale up the resilience building for sustainable development of the rural community for their livelihoods and other needs.

Building Social capital

DHAN has created more than 4700 Vayalagams, 250 cascades and 35 federations at block and district levels for sustainable development of small and marginal farmers in the drought-prone regions of Deccan plateau in peninsular India and also in some hotspots of North India. These nested institutions would keep the life time agenda in its course for addressing the risks and vulnerabilities against the climate change and other issues.

These nested institutions play a critical role in resilience building with the community and other stakeholders. Collective action strives to bring back regular maintenance through the community for repairs and renovation, which is the best practice of resilience for a sustainable tank system. This practice insulates the system against flood risks during the rainy season.

Creating endowment for the water bodies helps regular fund maintenance by the community without expecting support. DHAN has created more than 500 endowments for Rs.10 million from CSR funding and another Rs. 10 million from the community.

Adaptation practices by the community in adopting silt application, crop diversification, mulching, organic agriculture practices, composting, pipeline irrigation, Neerkatti system of irrigation, System of Rice Intensification (SRI) and others through grant and loan-based products have been proven as resilient tools in water management.

River basin based development approach

DHAN is implementing the water resource development based on the river basin approach at macro and micro scales of watershed and tank levels for addressing the risks and vulnerabilities to create a resilient community for sustained use of water resources. A targeted water

management tool has been adopted for more water per drop approach with basin level thinking and micro watershed and tank level implementation of the plan in a comprehensive way.

Traditional water managers for effective water management

The traditional water managers (Neerkattis system) is one of the age-old traditional systems to keep the watch and ward on water bodies and also to create an effective and efficient water use system for tank irrigation to ensure sustainable agriculture and also resilient structures against the flood and cyclone related risks. Traditional water manager system revival implemented by DHAN is one of the effective methods of resilient water bodies in the villages as flood and drought moderator for protection of villages and its community.

Village pond development for resilient drinking water development in the non-perennial river basins

DHAN has renovated more than 300 village ponds in peninsular India for addressing the issues of drinking water in the drought-prone regions of non-perennial river basin systems. Ramanathapuram, Pudukottai, Tuticorin, Kanchipuram, Thiruvallur, Sivaganga, and Madurai face acute drinking water problem during summer and other parts of the year. Renovating drinking water pond as an innovative resilient practice aids local solutions to address drinking water problems in a sustainable manner.

Farm ponds for life-saving irrigation

Heavy downpour during a few rainy days is a phenomenon caused by climate change. It necessitates more water harvesting structures to augment the water storage. While the tanks serve irrigation needs of the farmers in the entire command area, creation of farm ponds ranging from 500 cubic metres depending on the needs would supplement the irrigation needs of each farm, creating space for the farmers to adopt diversified cropping as fodder production for livestock, raise vegetable crop on its bunds and for fish rearing.

DHAN has supported creation of over 5000 farm ponds in the farmers' fields to provide life-saving irrigation to crops during the critical phases of water need, thereby securing their livelihoods. A properly integrated farm pond could act as the most critical shock absorber for the farmers to sustain the farm interventions.

Tank-Based Watershed development as resilient ecosystem approach:

An individual tank with its own catchment, water spread and command area is an integral part of a watershed within which it is situated. A cascade of tanks is a micro watershed by itself as the tanks are interlinked, often by a common stream or by the surplus water of an upper tank feeding a lower one. An existing tank or cascade of tanks within a watershed captures the rain water runoff and conserves it for later use, which would otherwise flow down the gullies and streams and mostly get evaporated or otherwise dissipated. Over the last two decades DHAN has been constantly advocating inclusion of tanks in the conventional watershed treatment plan. Started on pilot basis in Chittoor district of Andhra Pradesh in 1997, the tank-based watershed model demonstrated its impact, which has encouraged the government to include it in the revised guidelines for watershed. DHAN has taken up Watershed Development work in 104 watersheds under various central and state government schemes benefiting another 75,900 hectares of land through soil and moisture conservation practices. This is proven as one of the best ecosystem approaches and a resilient practice demonstrated at various parts of the country by DHAN Foundation during the last 25 years.

DHAN has demonstrated tree plantation as one of the effective interventions to create green cover and micro environment at the micro watershed level at 104 watersheds. Every year, not less than lakhs of tree plantation is done at watershed project implementation areas as a climate resilient product in the remote watersheds.

DHAN's Vayalagam model of water resources management with sustainability perspective has created resilient water resources development in resource poor and resource rich agro-climatic conditions. As an ecosystem approach, it addresses poverty and creates community resilience against the risks and vulnerability due to climate change and other issues. ❑

The Inextricable Linkage of Resilience in the Inclusive Development Agenda

Mamphela Ramphele*

Introduction

I cannot adequately express my appreciation for the invitation from the DHAN Foundation for me to participate in the 2017 Madurai Symposium. It has been just wonderful meeting all of you and learning about what you are doing. I have also taken the opportunity to visit your historic city. You have a treasure trove here.

I am here representing the various interests I have been pursuing for 50 years as an activist. The ideal of inclusive development in my own country, in all those countries that I have had traditional and emotional links with and ultimately in the wider global community, remains an enduring passion. I am here as a Trustee of the WomenStrong International, a Founder of ReimagineSA, and a global citizen.

Extractive exclusionary development approaches lie at the heart of our inability as a global community to act as consistent and principled stewards of the environment we are blessed with. We owe it to our children's children and their children to become better stewards so they can look forward with greater confidence to continuing enjoyment of a sustainable world.

In this talk, I would like to touch upon the following points:

> Irrefutable evidence confirms that a focus on women's full participation has been the missing link in sustainable, inclusive, and largely peaceful democratic governance globally. I will refer to The Athena Doctrine; the IMF study; and the McKinsey Gender Report
>
> The DHAN Foundation's development approach – Kalanjiam - and its focus on women as the pillars of development, is clearly ahead of expert knowledge and practice in the field.
>
> Opportunities for mutual support, collaboration and shared knowledge management between Africa and India

Irrefutable Evidence Supporting Inclusive Development

I come from Africa, the cradle of humanity. Africa's essential contribution to world civilisation has continued to be undervalued, including the African people themselves. All of us are Africans – we share a common heritage as humanity. There is only one race – the human race.

Africa had to develop the wisdom to survive the uncertainties of evolutionary forces that shaped the world we now call home. Our ancestors understood the inextricable links between human beings. The "I am because you are" – is a profound philosophical orientation that reminds us that human beings are wired for connectedness to others. Rejection, marginalisation and humiliation inflict deep wounds on those affected. But, we also now know that the wrong-doers in such humiliating marginalisation processes emerge as wounded people too. Resilience in tough environments is re-enforced by mutual respect, complementarity and collaboration.

Early African wisdom included the appreciation of the critical importance of securing capital for future investments. Our ancestors identified seeds as essential capital goods for food security and the very survival of the human race. Guess whom the task of keeping, preserving and securing the seeds was assigned to? Women. They could be entrusted with this enormous responsibility because they were known to be reliable,

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forward looking, act in the interests of the common good, and to have empathy.

Women have over the ages been at the centre of the creation of new life, its nurture and sustenance. So, why has it taken so long for the world to understand the importance of the feminine in the human story of the cycle of life?

Two men from Iceland, John Gerzema and Michael D'Antonio, were so appalled by the cavalier way in which Wall Street players, those men and a few women in pinstriped suits, collapsed the global financial system, that they wrote a book: The Athena Doctrine: How Women (and men who think like them) Will Rule the Future[1].

Their conclusion is that leadership based on the competitive masculine instincts is unable to rise to the challenges of a rapidly changing vulnerable world that requires greater finesse. They assert that: "A new breed of entrepreneur speaks of combining 'Chikara' (power) and 'Al' (love) to succeed in a time when co-operation is as important as ambition."

They travelled the world to gather data, interviewing 6,0000 people in 25 countries. One finding stood out when people were asked what might make the world a better place – "if men thought more like women"! In India 51% of men, 55% of millenials and 53% of all adults agreed with this finding.

What are the attributes that interviewees identified as distinguishing the feminine from the masculine? Glamorous, vulnerable, loving, trendy, giving, sensitive, patient, kind, stylish, passive, understanding, good at multitasking, gentle, empathetic, encouraging, sincere, intuitive, socially responsible, perceptive, passionate, flexible, creative, obliging, curious, nimble, imaginative, dependable, affectionate, expressive, supportive, and helpful.

When 30,000 were asked to rate these attributes in terms of Leadership, Morality, and Happiness, guess what? Feminine attributes score higher on all counts: in leadership, morality and happiness!

The good news is that whether you are a man or woman, you need both masculine and feminine attributes to thrive

1 Gerzema, J. and D'Antonio, M., The Athena Doctrine: How Women (and men who think like them) will Rule the Future, Wiley, 2013.

in today's world. But, a heavier dose of the feminine is the stuff leadership is made of.

For those not interested in soft issues such as attributes, take a look at the conclusions of hard-nosed International Monetary Fund and McKinsey (before being tainted by Gupta State Capture). An IMF study of sub-Saharan Africa in 2016 concluded that gender inequality, including legal gender-related restrictions, impede growth, especially in those at earlier stages of development. Studies show that for SSA GDP, annual growth could be higher by as much as .9% if gender and income inequalities were addressed.

McKinsey Global Institute's 2015 study was much bolder in its estimates of the opportunity costs of gender inequality. It concluded that $12 trillion could be added to global GDP by 2025 by advancing women's equality. This could be expressed as 11% in annual 2025 GDP. Regional breakdown of their estimates puts India's potential gain in 2025 at 16%, SSA at 12% China at 12% and Western Europe at 9%.

The Kalanjiam Development Approach: An Assessment

Ever since I got to know about the DHAN Foundation as a Trustee of WomenStrong International, the level of ambition, thought, and willingness to innovate has struck me. It helps that the Foundation founded on self-help groups in 1996, has a longer than usual track record for a civil society organization. Its operations display its maturity – all of 21 years!

Key success factors that seem to me to be a critical are:

- Quality and style of leadership
- Building on existing assets in the poorest communities
- Building on the Rock called Woman
- Patient building a foundation of trust before adding and then integrating initiatives into holistic development programmes.
- Attention to detail in documentation of programmes, lessons learnt and outcomes
- Smart partnerships

Quality and Style of Leadership

Vasi has demonstrated a knack for drawing on both the feminine and masculine traits to dare to dream. Vasi has clearly taken the words of wise people to heart: "Keep your dreams alive. Understand to achieve anything requires faith and belief in yourself, vision, hard work, determination, and dedication. Remember all things are possible for those who believe."[2]

However, dreams alone are not enough. To tackle development challenges in a society as stratified as India and to cross boundaries of religion, politics, gender, caste, class, age and geography requires courage. David Whyte, a marine biologist turned poet must have been speaking of Vasi when he said:

Courage is the measure of our heartfelt participation with life, with another, with a community, a work, a future. To be courageous, is not necessarily to go anywhere or do anything except to make conscious those things we already feel deeply and then to live through the unending vulnerabilities of those consequences.[3]

Even adding courage is not enough. Vasi has built formidable teams that generate enormous invaluable social capital. The SHG, the backbone of the programme must have been shocked by Vasi's audacity of engaging with them when no one else thought they mattered. But, he has also continued to build complementary, mutually supportive innovative teams. Over the last two days, I have seen the predominance of women in leadership positions driving innovative programmes with passion and sensitivity. I have seen retired bankers, engineers, agriscientists, academics and business people simply bowled over by the opportunities to make a difference and being part of making history.

Building on Existing Assets

The biggest asset I have noted in the DHAN Foundation all along, but one that was brought into sharp relief during this Symposium, is the complete embracing of the culture of participants as lived reality.

2 Gail Devers, AtoZ Quotes
3 David Whyte, AtoZ Quotes

I noticed with joy the use of the local language. Language carries culture and its use is affirmation of that culture. Education and the use of foreign languages are often barriers to inclusive social relationships. The sari is for me the most elegant feminine statement of glamour! It makes a major statement without being too ostentatious. Even the most simple sari bestows dignity on every woman.

The celebration of culture that we witnessed over the last few days is also a major asset to affirm and strengthen those living in tough environments. Mental and spiritual resources are unleashed to nourish souls to keep hope alive and to connect with futures they can imagine at the height of emotional stimulation.

Building on the Rock called Woman

There is a saying popularised by the famous Women's March on the Union Buildings in Pretoria at the height of apartheid in 1956. The women were protesting the then planned extension of "passes" – apartheid identity documents to monitor, control, limit the movements of black people, especially in urban areas. The women chanted: "You touch a woman, you dislodge a boulder, you will be crushed!" DHAN's focus on women as the rock on which to build resilient, inclusive, sustainable development, is a winning formula.

Women as "the keepers of the seed" are reliable forward thinking investors in their families, especially their children. But, women's superior social skills lubricated by sensitivity, patience, caring and empathy, are the cement that bind the SHG together. Success is guaranteed by a deep-seated understanding that "my success is bound with the success of the group." The journey from poverty to prosperity is a long one, but with the company and encouragement of group members individuals become more determined. Those who weaken are boosted by encouragement from others. The knowledge that one is not alone also builds resilience.

Patient Step-by-Step Journey to Integrated Development

Thomas Merton, a famous monk from New York, described his spiritual journey as "A Seven Storey Mountain." Like all journeys, there are ups and downs. DHAN's Kalanjiam approach has been painstakingly built on patience. Faith as hope in things unseen is also a major feature of this innovative approach.

Donors often too eager to show results tend to hound development practitioners. But, the most important results are invisible to the naked eye. The building of social capital entails incremental steps in mindset change in people whose lives have known nothing other than disrespect, humiliation, mistrust, betrayal. It is remarkable that in the short period since 1996, you have established 8 million groups connecting 95 million poor households in 14 states.

The exciting development beyond sustainable savings culture you have nurtured, is the integrated approach you have taken to support the move by poor women from poverty to prosperity, from anonymity to become part of inclusive development. Above all, DHAN is building a strong foundation for informed, critical thinking, active confident citizenship.

Your bold action to tackle Fostering Ethical Democracy and Advancing Micro-justice in India is the most innovative linkage I have ever witnessed in this space. Your inspired focus on local government is the most appropriate way of building inclusive participatory democracy. Promoting engagement with politics where it matters most is simply the best way.

Yesterday I was touched by a widow who was so nervous in her testimony that she had written her talking points in the palm of her hand. She was nonetheless determined to tell her story. She was proud to have risen from the pain of marginality to become a Volunteer Para-legal changing the lives of other marginalised people. Wow!

There is much talk about the need to promote the 4th industrial revolution. My observations over the years, confirmed by my participation in this Symposium, is that the Kalanjiam approach is heading on a fast track to the 5th industrial revolution! Your focus on building on the rich heritage of your culture, the strong tradition of learning by doing and learning some more, your excellent performance in the ICT revolution, your leveraging

indigenous knowledge and your focus on inclusive sustainable development puts you above the rest. You are unfolding something we can all learn from as we struggle to reach the Sustainable Goals the UN has set.

Smart Partnerships

The whole Kalanjiam approach hinges on building networks and connections. Your smart partnerships with banks, especially the Indian Bank, exemplify the capacity to mobilise growing value chains in which everyone benefits. Financial inclusion in your work goes beyond access to finance. Inclusion extends to networks of support as in the SHG, networks of services previously out of range, access to inter-and multi-generational resources and mutual support.

Your smart partnerships include your strong bonds with local and international as well as global networks of support. You are a key enabler of the attainment of Sustainable Development Goals, not only in India, but by sharing your experiences and lessons learnt; you are enhancing the capacity of other across the globe. For example, your role in WSI is seminal. You are learning as you also teach.

You have also developed a discipline to document, monitor, and evaluate as you go. This disciple enhances your ability to attract and keep donor partners.

What about DHAN and ReimagineSA future together?

There are many similarities between South Africa and India. Our separation by the Indian Ocean is no barrier to collaboration between us and between our countries. The differences between us offer opportunities for complementarities.

ReimagineSA is a collaborative platform aimed at advocating for, connecting change agents and catalysing the reimagining of the South Africa that has eluded us over the last 23 years. The excitement of the first few years post-1994 is being replaced by growing fear and despair by the majority of citizens who are being left behind.

Our diagnosis of our current state of the nation is that the **Political Settlement** of 1994 is at serious risk of unravelling because of our failure to follow through with complementing it with **Emotional and Socio-economic Settlements**.

We have chosen to focus on children in schools and young people in and out of the education and training system because they represent the largest proportion of the population of South Africa. They are in the best possible position to become the change agents as young energetic, creative and open to innovation people to complete the journey to the country of our dreams. We also know that parents and the wider community can also be engaged more easily through the shared concerns about the poor quality of education in post-apartheid South Africa.

Our model is a collaborative one that enables us to partner with a number of institutions that have successful track records tested by pre- and post-evaluation data undertaken by external third parties. We bring in the additionality of enabling institutions to strengthen their missions by re-imagining and reframing futures that promote transcending obstacles in the present by through conversations that open the way to making peace with the past to free the present and future from bondage.

Both our countries suffer the results of neglecting to heal the wounds of divisions of the past and establish the values of social justice – Emotional Settlement. Our governments have continued the injustices of the colonial and apartheid regimes because they did not make the effort to explore new models of ethical inclusive democratic governance.

John Henri Clarke, an African American Historian had this to say about our situation: "To control a people you must first control what they think about themselves and how they regard their history and culture. And when your conqueror makes you ashamed of your culture and your history, he needs no prison walls and no chains to hold you."[4]

The British colonial conquest is long over, but the deep imprints of control and command politics with state capture for the benefit of the ruling elite is alive and well. Your focus on educating and empowering citizens to become more active stewards of their democracy is exactly what is needed. Re-imagine SA is working tirelessly to promote, as you do, civic education in the school curriculums and amongst young people in and out of school.

We are also advocating for mother tongue instruction in the foundation years in our schools to promote local languages and cultures. We are championing African history from antiquity to reconnect our children to the rich heritage of our continent that has become lost to them. We know it will be a long process, a Seven Storey Mountain, but we have to strive to promote the emergence of informed critical thinking citizens who can shape the future they would like to live in and bequeath to their children's children.

We have much to learn from, and to support one another on this journey to building resilience in our societies, in our continents, and in our global village. Sustainable development goals can only be attained in countries where citizens stand up and claim this space as custodians of the future for the sake of the next generations.

Conclusion

This Symposium marks the beginning of closer ties between DHAN and ReimagineSA. It also has enabled me to better discharge my responsibilities as a Trustee of WSI. I have come, I have seen, and I am inspired. ❑

4 Google Quotes

Climate Change Concerns! Adaptation is the key for building resilience!

Adhinarayanan R*

In the last two centuries, there has been a drastic increase in the average temperature of the earth's climate system. Mankind has exhausted more amounts of greenhouse gases from the environment in the name of development. This emission has led to the increase in global temperature profoundly known as Global Warming. Water vapour, carbon dioxide, ozone, nitrous oxide and methane are the predominant greenhouse gases. Greenhouse gases originated during the formation of the Earth itself.

Greenhouse gases absorb the ultraviolet rays and heat from the Sun. Then, the greenhouse gases are partially emitted back into the space and part of it gets retained in the earth atmosphere. This process aids the earth to balance its temperature, conducive for the existence of the wide species of flora and fauna.

The ecosystem of the earth relies largely on the small changes happening in its inner sphere and the atmosphere. It has greater implications over the larger ecosystem. Recent human actions have increased the amount of greenhouse gases in the earthen sphere. Researchers point out that after-industrialisation, the global temperature has increased drastically when compared with the pattern of global warming in the previous centuries.

Luxurious lifestyle coupled with the population explosion, fast phase conversion of forest lands into farmlands, urbanisation and predominant and excessive use of fossil fuels to meet the energy needs have led to the excessive discharge of greenhouse gases. The diminishing floral natural resources have resulted in a reduction in the natural purifiers to absorb carbon dioxide and increase the oxygen quantity so as to balance the greenhouse gas level. This has raised the increase of greenhouse gases in the inner sphere which not only affected the human clan but also the whole ecosystem. The impact of the climate change has affected the poor and ultra-poor community badly.

Climate Change Vs. Mitigation

The earth has undergone evolution and various transformations since the existence of life on earth. The living beings get adapted to the changes and have evolved to their current state over the years. Living beings started to adapt their environment, lifestyle, and food habits based on their need. In Darwin's words, all species of organisms arise and develop through the natural selection of small, inherited variations that increase the individual's ability to compete, survive, and reproduce, simply termed us the survival of the fittest.

Ancient lifestyle of the Tamil community has always allied with nature which has clearly conceptualised in five categories of the ecosystem termed as the "Ainthinaigal". These ecosystem landscapes are *Kurinji* as Mountain regions, *Mullai* as (foot hills with grass land) forest regions, *Marutham* as wet lands, farmlands, *Neithal* as coastal landscapes and *Palai* as desert lands. This landscape classification is not restricted to its physical characteristics. It also includes appropriate lifestyles

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of the people such as food, dressings, livelihoods and shelters. The ancient Tamil literature Tholkappiam had depicted these landscapes and the lives of the people in detail. Our ancestors had defined wisely their livelihoods and festivals according to the nature of landscapes and the climatic environment. Based on these landscapes and the climatic conditions, the houses were constructed to mitigate different climatic factors such as heat, cold and rain so that they could align with the nature sensibly. For instance, coastal areas are always prone to the cyclones, so the ancestors had constructed their houses with wide walls, tall roofing and with sloppy tiled roofs.

Likewise in the drought-prone areas, construction of the houses was mostly in the proximity of water bodies without affecting the nature of the hydrology. They had used raw materials such as sand and bricks to raise the walls and roofing with locally available hay and grass in the construction of huts at higher elevation. These local materials aided them to tackle the severity of heat waves and made them feel cool inside their homes. To meet their water requirements, they created several tanks in cascades. These water structures assisted them to meet the water requirements of the community and their livestock. This aided them to tackle the droughts. The water structures were also useful in tackling the floods in case of heavy rains. The cascades of water structures were of great use in managing droughts as well as floods.

They practised multi-crop cultivation adaptive to the local terrain. This not only gave them sustainable production but helped them tide over the climate impacts Our ancestor's principal understanding and knowledge of nature led them to have a safe and calm life without exploiting the ecosystem. Their food habits also reflect their local varieties which had attributes to adapt the local climate to human needs. Hence, their adaptation to nature is very high giving least space for influencing climate change in their years. Hence, it is time to think and make efforts to revive the traditional practices embracing them to the present circumstances.

Where are we moving to?

Urbanisation, advancement in name of economic development, and political changes are being done without following the ethics laid by our ancestors. The development what we are undergoing is more of unethical consumerism.

The exploitative usage of natural resources has become a habit of the humans; this has led to the unsustainable breaking point in balancing the resource supplies. The present lifestyle is driven by social gree;, this has resulted in the degradation and subsequent build-up of concrete jungles in farmlands, and water structures, and natural resource exploitation. This recalcitrant attitude towards the environment in the name of development has led to inundation as a common phenomenon.

Inappropriate construction of standardised concrete buildings, without having consideration for environmental adaptability, has led to more heat origination. This has created the need for machines such as air conditioners which run on energy produced from fossil fuel, and has resulted in environmental degradation and global warming.

Encroachment on the waterways and poor urban planning tied with improper solid waste management are the ignition point of environmental destruction. The inequity in access to the natural resources, luxury lifestyle, and excessive use of natural resources other than actual requirements had resulted in the environmental degradation. Indigenous festivals, foods, culture, traditions, and

clothing associated with the local environment are being obliterated and adapting to non-native culture (western lifestyles) has its influence over the local environment.

Building Resilience to Mitigate Climate Change

Global warming is going to lead to a great disaster, but controlling greenhouse gases is not the only solution we have in hand. The present economic development and change of lifestyle have also impacted the climate change. Several multinational companies are working towards greed-based profit by destroying natural resources.

The ultra-poor people who are the most affected by climate change are not the reason for the creation of greenhouse gases. The rich and the economically better off who constitute less than 10% of the population are consuming 90% of the natural resources. Day by day, the consuming ability of the poor is on the decreasing trend which leads to increased deprivation of the poor. We need to change this consumerism considering the disparity and its bearing on climate change. Individual changes could bring in the desired effect on reducing the greenhouse gases and to preserve nature.

In India, more than 50% of the population is directly or indirectly engaged in agriculture for their livelihoods and are mostly ultra poor. They are on the verge of being exposed to the clout of climate change impacts. Globalisation and the open economic market are exponentially destroying the small economies of the ultra poor, thereby risking their livelihoods at stake. This is a catastrophe that the emerging economies face due to their economic approaches. We will not be able to stop the climate change, but we can work on adaptation and mitigation measures such as reducing or eliminating the product which emits high greenhouse gases, planting more trees and enhancing the green space to absorb carbon dioxide and emit oxygen. This helps in creating equivalence for the emission and absorption of GHGs.

Due to increase in population and the need for guaranteeing food safety, the practice of mono-cropping has emerged. To overcome food security, hybrid seeds, fertilizers, equipment and high water consumption were introduced. This resulted in totally reversing the environment not keeping in mind the adaptability of the changes. Especially in the region of drought and flood-prone areas, food security research is most needed. Traditional agriculture knowledge and culture are immersed together in our lifestyle which has safeguard mechanism such as diverse cropping pattern. Multi-crop pattern enhances the agricultural biodiversity facilitating the broad emergence of flora and fauna. At the same time, it is an individual responsibility to preserve our traditional knowledge and its benefits. To ensure food security, we have to act on the concept of “sustainable management”.

Development is inevitable, yet awareness is the need of the hour. Such awareness that

the earth has to be conserved is getting a wider reach. These positive developments are the silver lining in the ray of hope of creating an equal, unjust, balanced social order in the coming years.

Drought and Flood management methods

There could be better management of the existing water bodies and their supporting structures to catch the entire rainfall. Engagement of people in the restoration of water bodies is crucial in reviving and restoration of such structures. Crop selection according to the availability of water helps to tide over climate change issues. These water bodies help to tackle drought and floods.

Hygiene and Combating Diseases

The common contributor to threatening diseases are the mosquitoes; hence creating awareness about such diseases is most important. The spread of diseases is nowadays in line with yesteryear epidemics creating huge manpower losses similar to that of disasters. Awareness on preventive health care helps to create a resilient health care.

Poverty Eradication and Ensuring Livelihoods

Providing diversified livelihood opportunities is a path to creating a source of constant income. Government policies should facilitate to create secured livelihoods with localised consumption. In a short-term aspect, adaptation and mitigation is also a tool to combat climate change.

Disaster management

Categorising the disasters and providing adequate training to the community show the way to tackle even the worst disaster. Systematic approaches and training programmes are an effective way to reduce the loss of lives and assets in meeting such contingencies.

DHAN Foundation's Approach

DHAN believes in promoting community institutions to address their developmental needs. These community institutions take up renovation and restoration of tanks, lakes, ponds and other water structures and the efficient use of natural resources. Introduction of diverse crops, technologies, methods, and social security covers a wide range of needs, health interventions and techniques in a sustainable way to help communities build their resilience adapting to the localised situations. Connecting communities in conservation efforts benefit creation of local ownership in addressing environmental issues. Economic empowerment in ethical means helps build a society conscious of their developmental needs and the macroecological influences. ❑

Advancing Livelihood Resilience of Coastal Communities

Subburaj P*

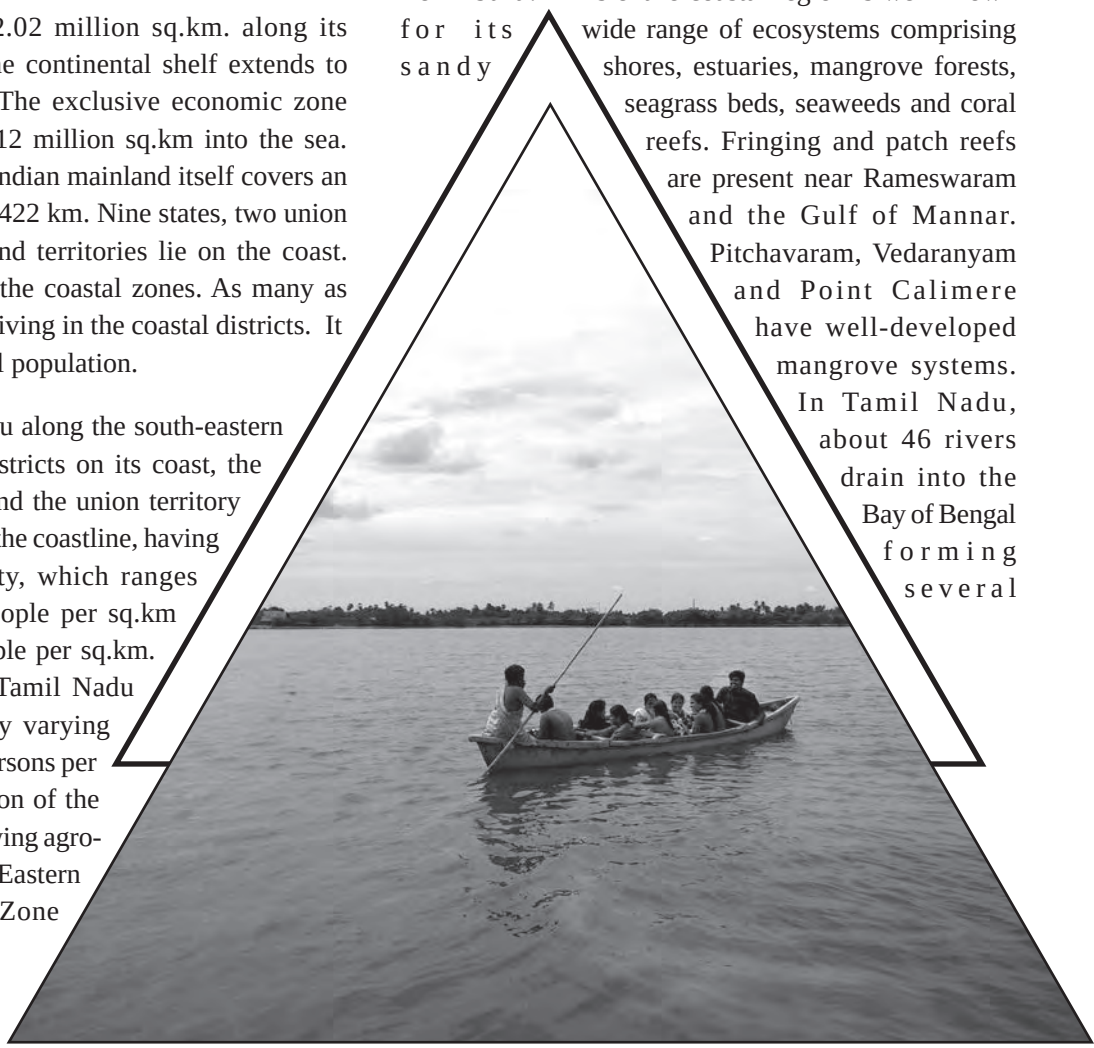
The Coastal Zone can physically and geographically be described as a corridor where the land and adjacent ocean meet. Functionally, it is the area of interaction between land and sea where production, consumption, recreation and exchange processes of climate change take place. Ecologically, the coastal zone is an area of dynamic biological, hydraulic, geological and chemical activities that support various human activities.

India has an area of 2.02 million sq.km. along its 7,516 km coastline. The continental shelf extends to about 372,424 sq.km. The exclusive economic zone covers an area of 214.12 million sq.km into the sea. The coastal part of the Indian mainland itself covers an area of approximately 5422 km. Nine states, two union territories and two island territories lie on the coast. Seventy districts lie in the coastal zones. As many as 171 million people are living in the coastal districts. It forms 14.2% of the total population.

The coast of Tamil Nadu along the south-eastern side of India has 12 districts on its coast, the State capital Chennai and the union territory of Puducherry lie along the coastline, having high population density, which ranges from as low as 320 people per sq.km to more than 3000 people per sq.km. The other districts in Tamil Nadu have population density varying between 300 and 800 persons per sq.km. The coastal region of the State falls into the following agro-climatic zones – North Eastern Zone, Cauvery Delta Zone and Southern Zone.

Coastal Ecosystems

The coastline of Tamil Nadu constitutes about 15% of the total coastal length of India with the varied ecosystem, natural resources, diversified species and livelihoods. The Tamil Nadu coast comprises the Coromandel Coast from Pulicat Lake in the north to Point Calimere and the Gulf of Mannar, which extends up to the tip of Kanyakumari and this is the southernmost point of the Indian Peninsula. This entire coastal region is well-known for its sandy wide range of ecosystems comprising shores, estuaries, mangrove forests, seagrass beds, seaweeds and coral reefs. Fringing and patch reefs are present near Rameswaram and the Gulf of Mannar. Pitchavaram, Vedaranyam and Point Calimere have well-developed mangrove systems. In Tamil Nadu, about 46 rivers drain into the Bay of Bengal forming several



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estuaries and coastal lagoons. The Cauvery River and its tributaries form a large delta supporting extensive agriculture. The other landforms of the Tamil Nadu coast are rock outcrops of Kanyakumari, mudflats, beaches, spits, coastal dunes and strand features.

The state's coast is not only rich in a variety of resources, but is also highly developed, with extensive infrastructure assets such as fisheries and fishery infrastructure, agriculture, ports and harbour, tourism, major energy sectors including nuclear, thermal and wind power installations, industries including saltpan, water supply infrastructure installations including desalination plant, minerals, oil and natural gases. These infrastructures provide various livelihoods to the coastal habitants.

Coastal Agriculture

Agriculture plays an important role in the state's economy. In coastal areas, the agricultural production makes an extremely important contribution to the local economy and to national agricultural production. It provides food and raw materials to the non-agricultural sectors. Soils of coastal agro eco-systems are deep to moderately deep, narrow coastal plains near the sea shore are sandy and inland plains are gravelly clay and gravelly loam. The most extensive and fertile Deltaic alluvium occurs in Nagapattinam district and a belt of coastal alluvium covers extends from Chennai to Kanyakumari. The temperature is hot, moist, semi-arid to dry sub-humid with a mean annual rainfall of 1000 to 1500 mm. Agriculture is dominated by rainfed, canal and tank irrigation.

The coastal districts abound in green paddy fields, tall coconut groves, vast gardens of mango, cashew, casuarinas, Palmyra, banana, cumbu, ragi, black gram, green gram, cotton, groundnut, gingelly, chilly, and coriander are cultivated. Paddy is the major agricultural crop in the coastal areas, particularly in the Cauvery delta districts. More than two-thirds of the farming community consists of small and marginal landholders. Agricultural work is the major livelihood for the agricultural labourers,

supplemented by multiple livelihoods such as seasonal fish catch in the rivers, backwaters, making of coconut leaf thatches, copra preparations, etc. Horticultural crops also play an important part in the ecosystem and the livelihoods. Coastal agriculture plays a vital role in reducing the pressure to the continental shelf by diversifying the livelihoods on agriculture activities instead of totally concentrating on fishing activities by the seashore habitants.

The agriculture dependents were mostly small and marginal farmers. In most habitations, a large proportion of farmers have very small and scattered landholding, with a large proportion of houses being thatched or government colonies, reflecting their poor economic status.

In terms of distribution of dry and wetlands, the proportion of wetlands with marginal farmers is marginally higher than those of the dry land. These wetlands in most cases are canal irrigated and present close to water bodies. These lands are highly vulnerable to flood-related disasters, especially in Nagapattinam and Cuddalore districts. Agriculture in the coastal area is under tremendous pressure with the dams and check dams constructed across the river , playing a vital role in controlling water availability.

Salinisation in these areas is the result of improper management of canal irrigation resulting in the rise of the water table and consequent accumulation of salts in the root zone in arid, semi-arid and sub-humid (dry) conditions. Ingress of seawater through backwater and estuaries because of close proximity to the ocean and use of high-salt containing groundwater for irrigation complicates the agriculture.

Low and skewed distribution of rainfall and heavy downpour in a few days, especially during northeast monsoon and consequent flash floods in frequent years and inadequate infrastructure to control and conserve the flood water, damages the standing crops heavily and spoils the agricultural production.

Disasters effect on coastal agriculture

The coastal agricultural communities have faced a number of disasters over a period of time. Flood, cyclones and drought have been the main disasters that have struck this area over years and tsunami once. The occurrence of floods, cyclone and drought shows that its occurrences have been frequent in these areas and have affected the livelihoods of coastal farmers, particularly small and marginal farmers whose agricultural lands are close to water bodies. The impact of disaster affects the land and its fertility (short and long terms). On the standing crops, it creates lodging and submergence, which has a direct impact on the production, yield and quality of the produce. Finally, it affects the food security and income of the farming community.

In addition to the above disadvantages, the cultivable area in the coastal belts is drastically reduced due to mushrooming of shrimp farming, seafood processing industries, development of special economic zones and rapid growth of real estate business.

Major issues in the coastal agriculture are as follows.

a) Salinisation/Alkalinisation

b) Ingress of seawater into agriculture lands

c) Drought

d) Natural calamities such as floods and cyclones

e) Development of special economic zones, urbanisation and shrimp farming

Remedial measures

Owing to the disadvantages faced by the vagaries of monsoon, cyclones, drought and soil related issues, institutions such as agriculture departments, state agriculture universities, ICAR, NABARD, NGOs, etc. are doing research and extension activities on coastal agriculture.

Government supports the farmers with soil testing, removal of salts, land surface levelling, gypsum application, various types of sowing techniques and advanced agronomic practices to aid the affected farmers. State agriculture universities conduct research, on-farm trials, demonstration and experimental plots to solve the issues through colleges and research stations. NGOs identify the affected villages and help farmers with the support of consultants by drafting the agronomic rehabilitation strategies in mobilizing farmers and agricultural laborers into self-help groups.

Farmers adopt novel approaches and indigenous wisdom to get the full benefit and avoid the effect of the disasters. Their wisdom aids to find alternative solutions to tackle the flood, cyclone, drought and soil-related issues. Even under the extreme situation, farmers have accepted the crop failure and obtained better yield in the next season. The climate change is undeniable and they look into this from various angles. A diversified list of solutions to combat the disadvantages of coastal agriculture is available, which has not properly reached the needy farmers. Likewise, many progressive farmers are practising novel techniques to overcome the difficulties being faced, these practices are to be propagated to the fellow farmers to maximise its impact.

Coastal Interventions adhered in their livelihoods interventions. Promotion of Village Conservation Councils in coastal villages facilitates community participation in environment conservation. Women-centric initiatives steer women empowerment by creating financial liberty through SH's. Studies carried out with GIZ titled Conservation and Management of Coastal and Marine Resources of Palk Bay help to contribute to the improvement of the conservation and sustainable use of biodiversity in the pilot areas, while taking into consideration the economic circumstances of the local population

After tsunami, desalination of the affected agricultural fields with large-scale community engagement and technological adaptation has helped the community to rebuild their affected livelihoods. Crop shift aided by research stations helped farmers overcome salinity issues. Collective marketing initiatives by farmers has strengthened farm income augmentation and in overcoming middle-men issues. Rehabilitation with conservation focus ensures community involvement in conservation and preservation of eco-system.

DHAN has facilitated the community to cope with disasters through various interventions. While working with fishermen, eco-system-based approach has been adopted. In drought prone coastal regions of Ramnad, Tuticorin, Pudukottai, and Thiruvarur, interventions such as farm pond, tank renovation, and drinking water ponds (ooranis) relieve communities from the impacts of drought and excessive rainfall. Thus, renovation of water bodies helps to earn livelihood in addition to the buildup of ground water reducing sea water intrusion. Action research shall also be taken up to quantify ground water recharge through renovation. Horticulture crop promotion among marginal farmers in their farm lands serves as a mechanism to balance climate adaptation in the long run.

Thus, community owned and managed federations in the coastal areas shall act as a strong demand stream to take up different financial as well as non-financial activities to strengthen the coastal community by collaborating with mainstream agencies.❑

Resilience Building in Rainfed Farming

Palanisamy M*

Status of Rainfed Farming

Rainfed farming is the mainstay of over 800 million inhabitants of the Semi-Arid Tropics (SAT). The inhabitants rely on traditionally organised and fragile agricultural systems for livelihood. In India, the rainfed area accounts for 82.75 m ha (58.53 %) of the net sown area of 141.4 m ha. Seven states namely Maharashtra, Rajasthan, Madhya Pradesh, Karnataka, Gujarat, Andhra Pradesh and Tamil Nadu account for 69 % of the total rainfed area of India. In the total agricultural production, about 86% of pulses, 77% of oilseeds, 66% of cotton and 50% of cereals are contributed by rainfed agriculture. Nearly 50% of the total rural workforce and 60% of cattle heads in India are located in these dry districts.

Rainfed farming systems are by nature diverse and house wide varieties of various crops. Rainfed farming is important in terms of agro-biodiversity and its nutrition value. In spite of the various benefits, rainfed farming is on the decline over the years. There are multiple reasons for stagnation in the growth of rainfed agriculture such as inadequate policy, research and investment attention, deteriorating soil health, lack of a commensurate increase in the price of produce with reference to the cost of inputs, inadequate credit supply, and ineffective extension and research.

Over the last four decades, rainfed farming as a livelihood and way of life has been affected and transformed in various ways. Rainfed cropping systems, farming practices and farming families are widely influenced by (i) Globalisation of the economy and socio-cultural features and (ii) Climate change.

Other than the influence of climate change, globalisation has led to

a) Shift towards mono-cropping and cash crops

b) Break in the integration of agriculture and livestock rearing

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c) Erosion of the status of farming as a respectable livelihood

d) Overarching control of corporate organisations on agriculture.

The productivity of rainfed crops has been affected very significantly in the last one to two decades by climate change induced causes such as variation and change in rainfall. A research study conducted in various parts of Tamil Nadu found that there have been many long-term changes in rainfall pattern, which adversely affect rainfed agriculture. Specific rainfall changes documented include the late onset of South West monsoon, decrease in South West monsoon rainfall, early withdrawal of North East monsoon and increase in pre-summer rainfall. The time-tested pattam (optimum seasons) for sowing, particularly the Vaigasi pattam (May-June) and Ani pattam (June-July) are losing their relevance in many parts of the state. The dry spell pattern within the crop period has changed, making the available rainfall less useful to the crops grown.

As a result of these developments, rainfed farmers have moved away from their roots and their functional and cultural links to the immediate ecosystem is fast declining or lost. Desertification and fallowing of lands are on the rise. At the individual level, rainfed farming families, like their other counterparts are undergoing nutrition transition involving (1) Change in food patterns, (2) Triple burden of malnutrition and (3) Increasing incidence of Non-Communicable Diseases and facing food contamination with the entry of a large number of chemicals in food. They are getting deskilled, which increases their dependence on external agencies. As a whole, there has been a significant erosion of farmers' control over their lives and migration to urban areas is on the rise.

Building resilience in rainfed farming

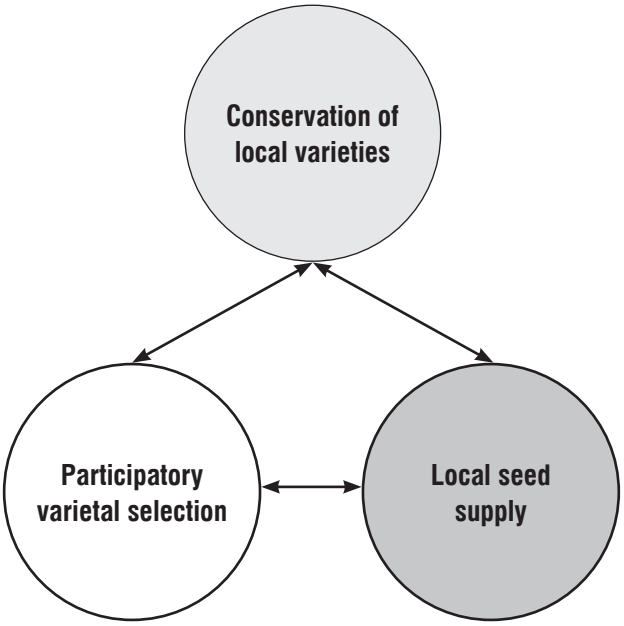
In this context, there is an urgent need for revalorising and rejuvenating rainfed farming through building resilient communities of small rainfed farmers with food, income and ecological securities. To achieve resilient communities of small rainfed farmers, their social, cultural and economic roots have to be strengthened, but with robust development perspective, which avoids the ills of gender, power and social hierarchies. The broader intervention areas for striking at the roots of the problems are:

1. Conserving and enhancing the natural resource base
2. Revalorising the local food systems through
   a. Strengthening existing good practices and
   b. Promoting self/community provision

3. Enhancing the natural resource-based (NRB) livelihoods by making them eco-friendly and improving value chain governance through building effective farmers organisations
4. Ensuring basic amenities to all – drinking water, food entitlements, access to health, etc.
5. Strengthening and promoting community and collective ethos in all walks of life

On these lines, Rainfed Farming Development Program (RFDP) of DHAN Foundation has been working with 22,231 rainfed farming families in 20 locations in six states to improve their individual and collective resilience since 2002. The specific interventions undertaken by RFDP for improving resilience of rainfed farming communities include the following.

1) Promoting farmers interest groups based federated rainfed farmers' organisations to serve as an agency for local development
2) Promoting context-specific need-based rainfed farming interventions in the working locations under different agro-climatic regions
   a. Land development following asset upgradation and asset-building strategies of the farmers through activities such as land levelling, stone bunding, converting uncultivable lands to cultivable lands, soil amendment, etc. Supporting indigenous/well-established activities resulted in, triggering value of work which is significantly more than the allowed estimate and high level of ownership and satisfaction.
   b. Promoting Community Seed Systems involving identification and on-farm conservation of local varieties, participatory varietal selection and local production and supply of quality seeds.
   c. Supporting the diversification of livelihoods, including dry-land horticulture, livestock rearing, etc.
   d. Preventive livestock treatment, including ethno-veterinary care
   e. Promoting small millet based cropping systems and their consumption through research-for-development for strengthening and expanding local and regional value chains for improving nutrition security
   f. Need-based credit to tide over the cash flow problem related to farming activities
   g. Crop insurance of various kinds to manage the weather and price risks
   h. Livestock development and mutual insurance to recover from unexpected loss of their assets.❑



Farmers Producer Organisation (FPO) for Sustaining Agriculture

Padmavathy V K*

Status of agriculture livelihoods

Despite all the constraints in agriculture, the biggest success of Indian agriculture has been its ability to be self-sufficient in food grains. The significant contributions of green revolution in the last 30 years are as follows.

- India has become a food sufficient country after the green revolution from 1963.
- Since 2000, India has halved the time required to add 75 million tonnes of food — from 25-30 years before 2000 to 14-15 years since 2000.
- India ranks among the top two producers in several agricultural products.
- India's per hectare agrochemicals consumption is one of the lowest in the world.
- Rural per capita income has grown faster than urban. The growth rate in rural per capita income in 2012 over 2000 is 11.99%, but for urban it is 11.19%.

However, all this does not mean that farmers have no issues or that rural India has solved all its problems. The methods of the Green Revolution often replaced low-impact traditional crop varieties and farming systems that had developed over hundreds of years in consonance with regional soils and climate – without absorbing the accumulated indigenous knowledge. Other prominent losses during green revolution are topsoil depletion, groundwater contamination, the decline of family farms, etc.

Along with these factors, the liberalisation and the rapid change in marketing have increased the gaps between the haves and have nots, thereby the inequality which is seriously expressed in the form of farmers suicides. The death toll increasing day by day and new states are also getting added to the list. The issue has to be recognised rightly instead of arguing for and against on the number and reason for the suicides. It is clearly evident that the farming community is suffering due to low productivity, low income, lack of institutional credit support and low water availability.

The need of the hour is cultivating the hope and building resilience among the farmers by way of introducing and identifying suitable and sustainable technologies/practices for each of the contexts. Climatic change adaptation and mitigation for production increase and marketing should be the core

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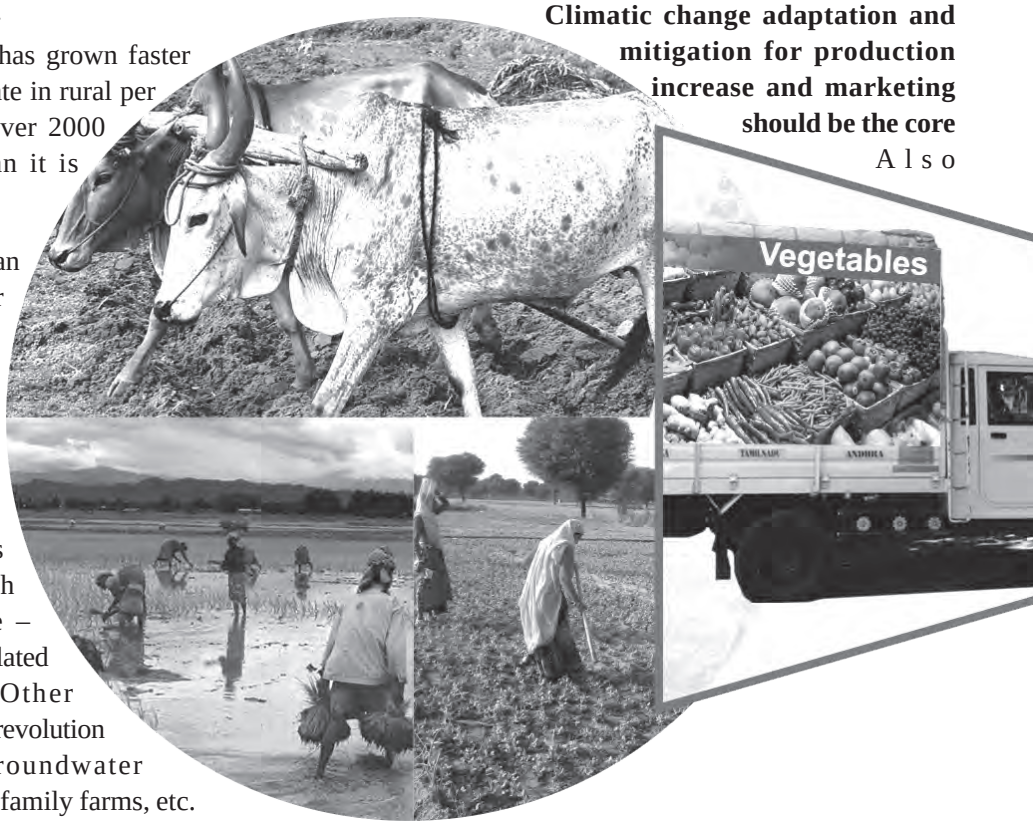

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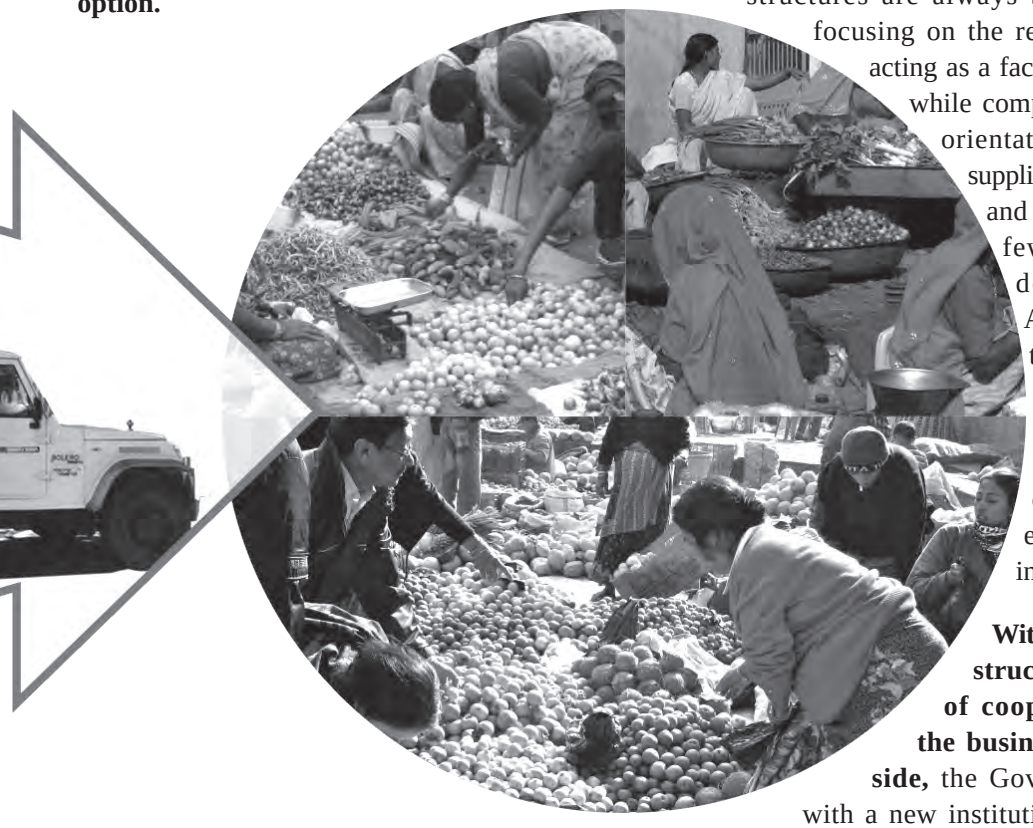
systems perspective is essential to bring sustainability. The system is envisioned in its broadest sense, from the individual farm, to the local ecosystem, and to communities affected by the farming system both locally and globally. Hence, every individual farmer should be empowered with knowledge and skills and they have to work together to influence the policies and market trends. With this perspective, the producer groups are now promoted by many development organisations for increasing the production and income. Similar to economic movement of women which was achieved through SHGs, farmer's economic movement has to be started with the focus on introducing sustainable agriculture practices with climatic change adaptation and mitigation.

In a nutshell – establishing economic movement of farmers and bringing the behavioural change among the farmers on the production and consumption practices is the important intervention to be made by all the stakeholders to bring hope to the farmers and to transform agriculture into a viable livelihood option.



Emergence of economic movement of farmers – The concept of producer organisations

With the continuous challenges – (low yield, lack of credit, market asymmetries, etc.) and the absence of an effective organisational structure, farmers, especially the small and marginal farmers are on the verge of either becoming incompetent in the market or find themselves in a captivate position under local buyers or village level brokers. These constraints bring out the need for local collectivisation of farmers. Many other countries which have introduced such structural changes are successful in agriculture production and income and satisfying the demand of the farmers.

Collectivisation helps in introducing economies of scale, bringing down the input costs, better bargaining power and magnifies the voices of farmers as collective voice. The most common form of collectivisation that Indian farmers have adopted over the years are cooperative societies, federations of self-help groups, joint liability groups, farmer clubs, common interest groups. These structures are always been inward oriented, i.e. focusing on the requirements of farmers and acting as a facilitating organisation to them while completely ignoring the outward orientation, i.e. the market needs, suppliers and end consumer demands and changing accordingly. Only few have become successful demonstrations such that AMUL and the reasons for the success of these producer institutions are strong leadership, contextual factors and entrepreneurial traits of a community, legal and environmental support to these institutions and a robust design.

With the need for an institutional structure that consists of ethos of cooperation on one side and the business resilience on the other side, the Government of India came up with a new institutional form called 'Producer Companies'(PC) in 2003. The PC will be promoted

locally and will be networked at larger level like **Confederation of Indian Industry and The Federation of Indian Chambers of Commerce and Industry in future**. The concept is popularised only from 2013 after successful demonstrations in few of the pockets. This initiative is spearheaded by NABARD and Small Farmers' Agribusiness Consortium (SFAC) and promoted more than 2000 producer organisations for different crops and in different regions across the country. Many resource institutions have been identified and assigned to handhold the producer organisations.

Need of FPOs for Sustaining Agriculture

1. Institution building for sustainability

Promoting the producer organisations based on the principles of cooperation alone is not sufficient to sustain the organisation because the Producer Organisations have to exist amidst the tough market situation. Hence, the enabling ecosystem should be created initially both by the government and the facilitators. The enabling ecosystem includes the institutional architecture, capital, access to technology, market, etc. Appropriate architecture of producer companies at panchayat, block and district levels have to be promoted considering the key design variables such as size, scope, technology, management and ownership and these variables need to be simultaneously optimised for sustainability. The main objective of this structure should be facilitating optimal roles and responsibilities at different levels and to establish long-term stable business relationships among the producer organisations at different levels. This networking architecture can optimise production, reduce transaction costs, increase efficiency and ensure sustainability of farmers/producers.

Like the SHG movement, enough resources, time and capacity building should be provided by all the stakeholders. Enough time should be given both for promotion and growth of the organisation. A minimum of three years of time is needed to build the capability of producers to handle the business and sustain it.

2. Patient capital

Patient capital is another name for long-term **capital**. With **patient capital**, the investor is willing to make a financial investment in a business with no expectation of turning a quick profit. Instead, the investor is willing to forego an immediate return in anticipation of more substantial returns down the road. This sort of capital has to be infused by the investors and the banks to encourage the inexperienced farming community to venture into the business and make it sustainable.

3. Creating viable ecosystem

A favourable ecosystem is a must for development of these producer companies because they have to deal with the most vulnerable part of agri-value chain which starts from the farm and goes on till processing and the faraway markets. **The critical ecosystem services include emergency credit, consumption credit, production credit, retail services of inputs for agriculture and other agricultural production services required by the small and marginal farmers.** Unless these services are provided by a producer company, it cannot divert the surplus produce from the local trader or shop keeper to the producer company. In addition, the producer company can take up other services related to facilitating linkage with the banks and departments for ensuring the infrastructure access for the business. The multiple services will enhance the scope of the producer company and become financially viable much faster. It does not have to seek economies of scale from the surplus agricultural produce alone which will have adverse impact on the producer company due to its seasonal nature.

4. Increasing productivity

Suitable crop, seed, correct recommendation of inputs and proper harvest and post-harvest technology should be evolved and adapted for the each of the contexts with the perspective of climatic change adaptation and mitigation. Sustainable agriculture practices and kit (SAP and SAK) needs to be evolved through farmers research and field experimentation/demonstration. The indigenous seeds and practices have to be validated and disseminated.

5. Market Knowledge

The market practices of farmers and the system established by the government is not converging anywhere. The government infrastructures and practices are fit to larger farmers and the small and marginal

farmers largely depend on the agents and brokers due to low quantity of products. There is a need for collectivisation of products and the understanding on the market for the small producers. Along with this, consumer need and demand has to be understood by the farmers for deciding their crop and quality of production. Hence, thorough knowledge on the customer food safety, environmental protection and the market should be developed and integrated as the component of the production.

6. Market infrastructure and public procurement

The infrastructure for the producer company includes the basic facility for conducting the day to day operations, storage facility for the surplus produce of the farmers, processing facility for drying, grading and value addition. As the producer company increases its volume of transaction, it will require its own transport and marketing facilities. Government facilities such as warehouse, godown and machineries should be available on lease to the PCs. The government can also allocate some common land for the PCs to establish such an infrastructure. The policies on the public procurement at the regulated market should be relooked and consider the need of the small and marginal farmers.

7. Startup Hub

The Startup Hub is a platform for entrepreneurs to connect with other entrepreneurs, advisers, consultants, mentors, guides, impact investors, incubators and accelerators & venture capital firms. This platform helps them to connect, collaborate, learn, and seek advice and network with fellow members. The startup hub should

1. Support the PCs in completion of regulatory formalities which are time consuming and difficult in nature.
2. Help in establishing the collaboration.
3. Assist startups through their lifecycle with specific focus on important aspects such as obtaining finance, feasibility testing, business structuring, enhancement of marketing skills, providing technology and management evaluation
4. Organise mentorship programmes in collaboration with government organisations, incubation centers, educational institutions and private organisations.

Building a sustainable community system which is a producer and market driven organisation is indeed highly knowledge intensive and resource intensive. Collaborating with experts who can think out of the box for sustainable solutions can be the way forward. The startup hub should create such a platform for the PCs to work with the local (district or state) level academic, social work, agriculture and management institutions.

In 2004, DHAN Foundation promoted producer organisations for sustaining the production and linking them to the larger market. The first farmer's producer company in India was promoted by DHAN Foundation on organic chillies. Ten such producer organisations were promoted on different crops and were piloted. Based on the experience from the pilot, with the support of NABARD and SFAC, DHAN Foundation has expanded the producer organisation concept across four states of India viz., Tamil Nadu, Karnataka, Telengana and Andhra Pradesh and promoted 52 producer organisations from 2015. All the companies are just one-year old and in the formative stage. The producer company is promoted by the Primary Producer Groups (PPGs). The PPGs are promoted at village level with 15-20 producers from the same village and they are the members of SHG or farmers association.

The producer organisations are promoted as the collective organisations of the thematic federations. To have a common identity and to promote a network for collective action across, the producer companies of DHAN are branded as JEEVIDAM. During the last one year, JEEVIDAM producer companies have enrolled **50,000 farmers as members and have done a business for rupees four crore within six months of promotion even at the severe drought scenario.** The major focus of the producer companies are promoting and strengthening the governance system for production and market stabilisation, creating access to credit for production, introducing technology for production and collective marketing of produces. ❑

Changing Crop to Build Resilient Farming

Meenakshi A* & Sumitra V**

"Pulses are the food of the future. They are the future of better nutrition… the future of improved health… and the future of sustainable food."

Pulses are good for health and are very nutritious. They are very low in fat, high source of protein and full of vitamins and minerals. They are being grown and consumed for over 11,000 years. Pulses cultivation is carried out in 173 countries, making pulses one of the common crops across nations. Growing pulses also promotes sustainable agriculture, helps decrease greenhouse gases, and fixes nitrogen in soil thereby increasing soil health. Cultivation of pulses requires less water than other crops. Pulses are good for all ages. Above all, they are easy to cook. It is hence the **68th UN general assembly declared 2016 as the International Year of pulses.**

The Tanjore Cauvery delta is well-known for its paddy base. It is the prime source of livelihood for the whole delta stretch for years. However, frequent droughts and inadequate water availability in the reservoir has also added strain to having successful crop yield. From three sowings in a year, cultivation has shifted to at least one good crop in a year. Agriculture has become an unprofitable activity and the farmers were in a dilemma whether to continue its cultivation or not.

Crop Change to Adapt to Climate Change

In this context, the National Food Security Mission (NFSM) partnered with DHAN Foundation to facilitate demonstration of pulses farming. This project is being implemented by DHAN Foundation through the Agriculture department in Kumbakonam, Thiruvidaimaruthur and Thiruppananthal blocks of Thanjavur district of Tamil Nadu. Through this intervention, we support 318 farmers to conduct demonstration in 300 hectares.

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The major programme components of this initiative are to identify a select set of farmers to conduct the demonstration in their field. Then awareness is created among the demonstration plot farmers, providing them technology guidance and support to take up the crop in their field. Need-based training programmes are conducted to create shared understanding and events and agricultural festivals organised to propagate the learning and success to the farm fraternity.

To generate common understanding among the implementing staffs, the regional office organised orientation programme for the field staff. The team members were briefed about the project and the expected activities in the field. Subsequently, through the Assistant Director Agriculture's office (ADAO) of the Kumbakonam, Thiruvidaimaruthur and Thiruppananthal blocks, field visits were conducted to for interaction in the field. This orientation visit helped the participants gain awareness about the farmers' perspective and potential activities.

Target people and project area

The target group in this initiative are the farmers having more than one acre of own land and interested in cultivating pulses followed by paddy. We selected twelve villages in the three blocks to create clusters to make the initiative viable and assist in the sustainability of the activity to the farmers.

Black gram in the Delta

Black gram (Vigna mungo) is a widely grown legume, belonging to the family Fabaceae and assumes considerable importance in terms of food and nutritional security. Black gram is very nutritious as it contains high levels of protein. Black gram complements the essential amino acids present in most cereals and plays an important role in the diets of the people of Nepal and India. Black gram has been shown to be useful in mitigating elevated cholesterol levels.

Black gram is a common crop in the delta belt as a post harvest crop after paddy. The yield of the local variety being cultivated is found to be lesser compared to the IPU 941 seeds. These hybrid seeds are known for their better yield and pest resistance. Hence, it has been decided

to introduce the IPU 941 seeds among the farmers. It is expected to give more yield, thereby increasing the profits of the farmers.

Intervention Villages

The field visits provided the leads for identification and selection of villages. In consultation with the ADA office, the 12 proposed intervention villages were indentified for the black gram demonstration. These villages were selected from three clusters, so as to distinguish the differences in yield and adaptability. The identified villages are Nachiyarkoil, Mathur, Melamathur, Enanallur, Sembiyavarambal, Vanduvanchery, Thandalam, Thanthanthottam, Krishnapuram villages of Thiruvidaimaruthur block and Serukudi, Mela Kattur and Keela Kattur villages of Thiruppananthal block.

Community Engagement

Before the identification of beneficiaries, we conducted sensitisation programme in the three villages (Nachiyarkoil, Enanallur and Sembiyavarambal) to understand the potential, interest level of the community, their needs and to identify farmers inteested in the pulse demonstration. This gave the necessary orientation and awareness about the project as well as the approach to

be undertaken in the villages. It gave the project team the ideal space to get introduced to the community and understand their expectations.

The community also became aware about the project through these interactions. Pamphlets describing the objective of the initiative, information about the gains of IPU 941, and details of the scheme subsidy from the agriculture department were distributed to the villagers.

Beneficiary Identification

After the selection of the intervention villages and the community engagement awareness programmes, we identified 318 interested farmers from these 12 villages. Efforts were made to ensure participation of small and marginal farmers among the 318 farmers. Based on interest and area of cultivation, a list of farmers was generated with consultation with the local community and ADA office. Once the list of farmers was prepared, we asked the farmers to submit the Patta and Chitta Adangal with VAO certificate on cultivation. These farmers were termed as isolation farmers.

Demonstration

Then, the farmers were briefed about the advantage of the new variety, its better yield, the yellow mosaic disease tolerance feature, and its lower water needs. A quantity of 20 kilogram of seeds was distributed for one hectare of land at a total subsidy of Rs. 7,500 from the ADA office. Seeds and bio fertilizers were distributed to the farmers by the department through Depot. The other subsidies were released to their account on submission of bills.

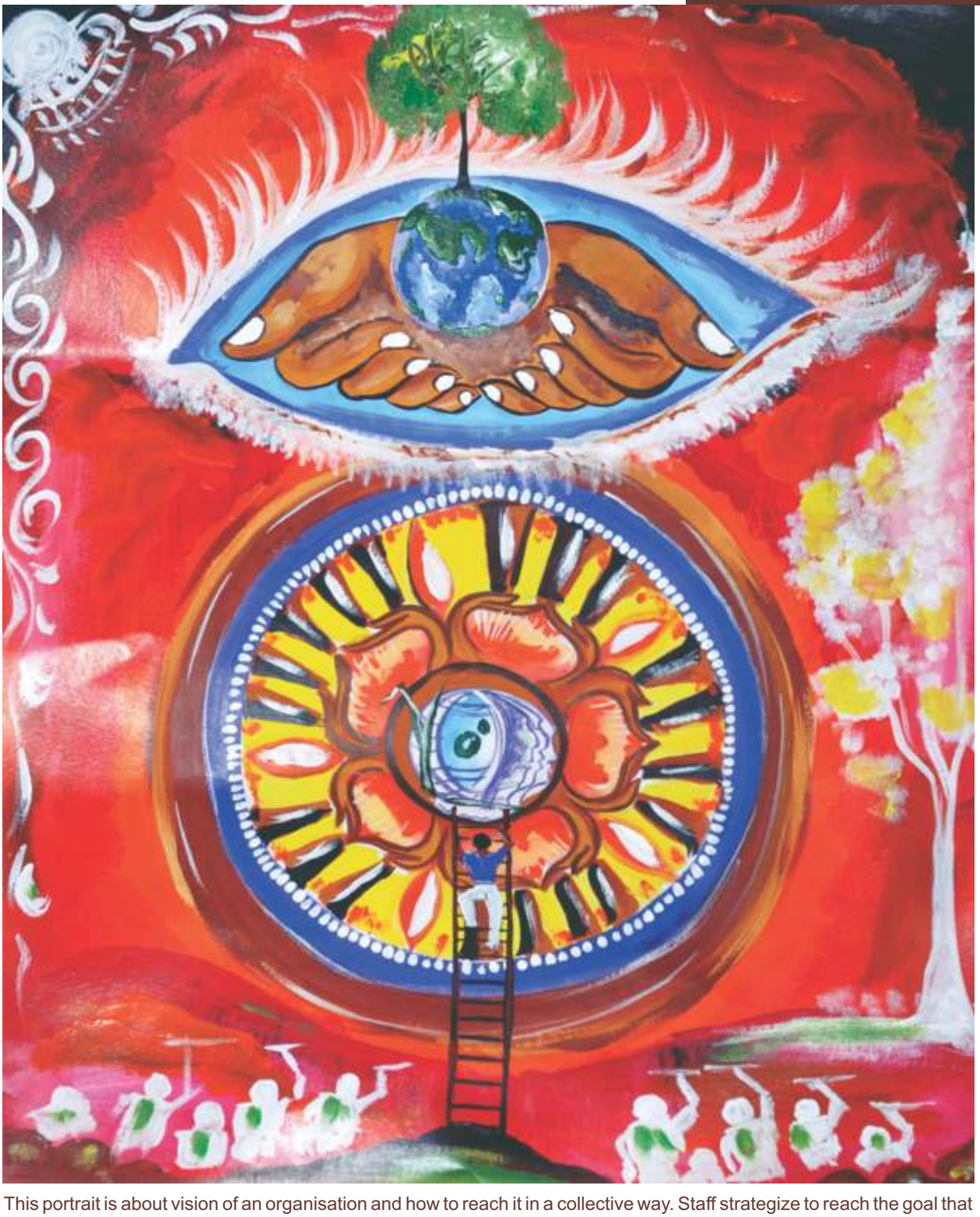
The demonstrations were conducted in 300 hectares of land belonging to 318 farmers after procuring all documents from them. The ADA office facilitated field visits to farms and guided the farmers in the field to clarify doubts and in application of manure and pesticides.

Outcome

The demonstrative initiative carried out in 300 hectares has yielded good results and the farmers were happy after receiving good yields. Yield assessment was done by visiting the farmers field and also through Focused Group Discussion (FDG). In the FDG the farmers expressed that the variety IPU 941 is resistant to yellow mosaic. It is growing up to knee height in irrigated condition and is flowering for 2-3 times resulting in good yield of 1200 kg per acre and the crop lasts for 90 days in field to give completely matured pods.

Our field assessment also shows that in the rice fallow pulse the population is not maintained properly and has given yield of 500 kg/ acre. But in irrigated sole crop population, growth, flowering and yield are very good up to 1,200 kg per acre, especially in Kumbakonam block around Serukudi. This is 40%-150% higher than the regular average yield. The bean quality was also so good that it fetched Rs.63/- per kilogram against Rs.50-55 for the produce of the earlier variety during the same year. Thus the crop intervention initiative has helped the farmers to obtain higher yields with better price raising the hopes of the farmers in carrying out agriculture profitably. ❑

Visioning



This portrait is about vision of an organisation and how to reach it in a collective way. Staff strategize to reach the goal that is central to the organization having concern for the world. It was prepared by Manjunatha who participated in the annual retreat of DHAN that focused on strategic planning.

Symposium 2017 - A Glimpse

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