



Organised by Digital Empowerment Foundation, WSA, and European Union
Hosted by T-Hub, Government of Telangana

Roundtable Discussion on
**Digital Innovations to Support
Sustainable Agriculture Value
Chains in India**

 16 February 2024

Session moderators:

Osama Manzar (Founder, Digital Empowerment Foundation),
Peter Bruck (Chairperson, World Summit Awards)
Laurent le Danois (Delegation of EU to India & Bhutan)

Introduction

Digital Empowerment Foundation (DEF) in partnership with the Technology Hub (T-Hub) Telangana and the Centre for Development Policy and Practice (CDPP) hosted a roundtable discussion on 'Digital Innovations to Support Sustainable Agriculture Value Chains in India'. This was held as a part of 'World Summit Awards (WSA) Grand Jury & Digital Impact Days'.

The discussion brought together diverse stakeholders from the government, WSA grand jury, international organisations, startups, think tanks, civil society organisations and other experts in the field.

The roundtable discussion aimed at identifying sustainable digital innovations to achieve inclusive and equitable value chains in the Indian agricultural sector. Thought leaders from different states in India were part of the roundtable.

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Key challenges and opportunities

Effective utilisation of technology

The utility of technology has been a major contention in agricultural practices. While one side argues for the usage of technology (such as precision farming), the other side points out a techno-centric approach's inability to identify or address the problems on the ground.

In terms of digital deprivation, farmers stand along with other disadvantaged sections of the society, including rural women, artisans and first-time technology users who are at the receiving end of the digital divide. Digital has become a necessity for these communities for various reasons. Given the digitalisation of the functioning of the government, these communities are stranded in the process of claiming their basic rights.



“A farming community is one of the most unconnected and most deprived communities. They need to be brought into the digital platforms in a conscious and meaningful manner.”

- Osama Manzar
DEF

A few of the voices that emerged in the discussion pointed out that, while designing services, agri-tech companies, as commercial entities, may not prioritise enough ground realities. Such hyper-local design processes are time- and resource-intensive. Also, when agricultural produce goes to market as organic or in any other form, it may be susceptible to market forces, affecting sustainability. So such realities must be identified and addressed across the value chain.

Breaking Monopolies

Technology and innovation should be deployed at every possible stage of the agricultural value chain. However, given the power relationship between technology companies and farmers, there is a tendency for monopolisation.



“One needs to make sure that the intermediaries are not monopolising levels of interaction in the agricultural value chain. You need to make sure that you have horizontal deregulation and break the monopoly.”

- Peter Bruck
Chairperson, WSA

Similarly, farmers are vulnerable to exploitation in these digital ecosystems.



“Any Kind of digital transformation process, when unleashed in these ecosystems, there is usually a complex set of power relations that can develop.”

- Anita Gurumurthi
IT For Change

Ensuring credit flow to farmers

Credit availability is a significant factor in the agricultural sector. It is a major hurdle, especially for small & marginal farmers and tenant farmers. It is also difficult for farmers to navigate the financial institutions, which are largely digitalised, in order to access credit at the right time with reasonable interest. However there are few successful models where credit availability can be fast-tracked.

However, financial literacy among farmers is an important factor for the effective utilisation of such credit. Civil society organisations should focus on imparting financial discipline among farmers and make farming economically sustainable.



“We have to think about how we can make farming economically sustainable. Any loan amount is a temporary solution.”

- Ashhar Farhan

Co-founder, Daana

Providing sustainable markets for farmers

Diversifying and opening new markets for farmers should be prioritised. Digital markets can be a sustainable avenue for farmers to sell their produce, given their reachability and ability to adapt to new markets. “Daana ” is one such successful e-commerce model from Hyderabad, Telangana, that uses dehydration technologies to cut down transportation costs and to provide international markets for local produce. This particular example also argues for adopting a commercial company model rather than an Non Governmental Organisation (NGO) model for sustainable agri-businesses.



“Farmers' core strength is to produce food, not to sell. So we decided to form a company rather than NGO because key performance indicators for social enterprise are very different.”

- Ashhar Farhan

Co-founder, Daana

Further, it is difficult for small agri-businesses to get their food-processing certification and to find markets for their produce. Due to this, farmers can't sell their produce as Organic. Also, proving land ownership is difficult for farmers with small plots of land, which is a prerequisite for accessing financial institutions and even for getting food-processing certification.



“Land ownership is very difficult to prove given the fragmentation of plots across extended families and across generations.”

- Anshuman Das

WeltHungerHilfe (WHH)

Recognising role of women in agriculture



“The Indian farmer is not only a typical man with a turban but also a woman in a sari. Most of the farming is actually done by women.”

- Ashhar Farhan

Co-founder, Daana

Among the farming communities in India, women are invisible. For small and marginal farmers, agriculture is a family labour where women contribute on par with men. Historically, women have been deprived of land rights, water rights and other types of social discrimination. It is important that women are included in technological or digital interventions in agriculture. Without this acknowledgement, women get further marginalised.



“Technology should not be another instrument of disempowerment of women. Digitalisation or lack of digital literacy should not become a tool for widening this gap further and another layer of discrimination.”

- Nivedita Varshneya

WeltHungerHilfe (WHH)

Similarly, women’s perception of agriculture is different from how men perceive farming. While men show more interest in commercial farming, women prioritise food crops that secure food for the family. In one such case, DDS (Deccan Development Societ) works with Dalit women farmers in Zaheerabad, Telangana. It is a successful example of how contextual farming practices are self-sustaining and conscious of the ecology.



“When we started working with men, what they wanted was borewells to do commercial crops. However, the women in the community wanted to go for food crops. Because with commercial crops, men will get money, and they have to be wholly dependent on them.”

- Santoshi Srilaya Routhu

DDS

Tenant farming in Telangana

Tenant farming is a common practice among small and marginal farmers in states such as Telangana. In tenant farming, farmers with small plots take leases of more land to do farming. This practice has further pushed these farmers into distress due to various reasons. Lease payments often tend to be high and take away the major portion of the final product, eventually making them debt-ridden. In this vicious cycle, they lease larger plots to pay off debts.



We did a survey on tenant farmers and suicides; we saw that around 75% of suicides are by tenant farmers. People who go for lease own very small plots of land, out of which they can't make a living. They have to risk and take land on lease."

- Harsh
ASHA

However, all government incentives and other benefits go to the land owners and not tenant farmers. The existing agri-stack databases of farmers mostly reflect the landowners and not cultivators. Also, more and more tenant farming, which aims solely for income, may affect sustainable agriculture practices in the long run.

Small and marginal farmers

Technology, if utilised in a conscious manner, can be a boon to agriculture. Tech-enabled farming could result in efficient farming with sustainable value chains. However, given the commercial nature of such deployments, not every farmer can afford such services.



“Sadly, when we talk about tech-intensive agriculture, we see more automation, which is true in the case of larger lands.”

- Harsh
ASHA

Similarly, small and marginal farmers are mostly leaning towards a secondary source of income due to the uncertainty of farming. This will eventually result in the death of sustainable farming practices and the efficiency of the produce. Along the same lines, the existing agro-advisories and digital/technological interventions mostly address the mainstream problems. Whereas the needs of small and marginal farmers are not addressed adequately. For example, mixed crops in small plots is a common farming practice, which requires different services and advisory.

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Recommendations

Sustainable agriculture and sustainable value chains

Prioritising sustainable practices in agriculture is necessary while utilising technology. It is also important for companies to be receptive to and work with the local knowledge system in farming communities. In acknowledging the ground realities, one needs to segregate the different stages of agriculture and see where innovation can be deployed.



“Right use of technology can benefit farmers who sustain realities. Digital technologies are available for farmers which can enhance the actual systems of sustainability by improving the knowledge on the ground.”

- **Suresh Motwani**
Solidaridad India

Areas where technology companies can sustain and complement the local knowledge system:

1. Health of the crop
2. Market
3. Usage of fertilisers
4. Prioritising regenerative farming practices

Avoiding generalisations of agriculture vocabulary

There is a tendency to generalise when we talk about agriculture and farmers. Farming practices vary across different parts of the country with different technological and other requirements. Farmers in India are diverse, with different sets of problems and specific value chain approaches. So, there is a need to acknowledge diversity before approaching this sector in any capacity.



“Farmers are not monoliths. They are tenant farmers, cash crop farmers, small and marginal farmers etc. Each of them has a different context and different challenges.”

- Abhishek Jani

Fairtrade India

In order to achieve workable solutions for farming and its value chains, all stakeholders must probe the following:

1. Who is a farmer?
2. What is technology?
3. Who is the consumer?



“These kinds of important conversations should result in workable solutions. It should be digitalisation and not just digital. Digitalisation innovation for sustainable agriculture, and what should be the contours of digitalisation and innovation?”

- Rijit Sen Gupta

Center for Responsible Business

Two important elements to be considered in the process of coming up with workable solutions in the agriculture sector:

1. Design
2. Application

Data protection at the grassroots level: Farming communities

Technology companies may indulge in extracting a lot of data from the farming communities in the process of designing and implementing their products. This might make farmer's data vulnerable to be misused and deny their data rights. While digital solutions are helpful to farmers, they can be exploitative in many ways.

India requires certain policies that make companies responsible for the data they extract. For example, the Health Data Commons policy of the EU (European Union) talks about mutuality and reciprocity in the innovation ecosystem. The current Data Protection Law in India could draw insights from this policy when formulating policies to protect farmers' data in digital innovations.

Following are a few recommendations for such policies:
Anita Gurumurthi, IT For Change

1. Farmers' agencies should be protected in the ecosystem of apps where they can own and make decisions about their data.
2. All companies that build the app by extracting data should be recognised as data processors with responsibility towards that data.
3. Sector-specific data laws are necessary in the Indian context.
4. Farmer-producer organisations to be recognised as co-operatives and data stewards.

Sustaining local knowledge systems

To bring sustainability to agriculture, it is important to understand the ground realities. The local knowledge systems developed over generations have the necessary understanding to balance and sustain agro-ecologies on the ground. These practices must be understood before designing any technical or digital interventions. Also, it is important to understand agricultural lands as zones to contextualise solutions based on factors such as soil types, water resources and naturally grown crops.

A few elements to be included in the design process: Rijit Sen Gupta, Center for Responsible Business

Language; how to communicate a particular design.

Barrier; Ensuring that barriers are low.

Understanding of the local knowledge; To what extent are the inputs from the ground incorporated into the design

Context; Context in which a particular product is produced.



“When we have the voices of the most marginalised, then we get sustainability in agriculture.”

- Santoshi Srilaya Routhu
DDS

Encouraging young farmers

Many discussants raised concerns over the future of farming, especially in the context of the lack of young farmers. Agriculture has been failing to attract youngsters. Also, the agribusiness approach is a challenging path in terms of licensing, certification, small plots, chemical-intensive farming, and other

degenerative practices. Economic appeal to young farmers can be realised only when sustainable farming goes hand in hand with a sustainable value chain, which can promise lucrative markets. Also, digital and technology interventions in agriculture have the capability to attract more young farmers.



“One of the principal things we need to focus on is the farmer’s self-esteem and the farmer’s conviction that they serve the purpose and are important.”

- Dorothy Gordon
WSA Grand Juror

Among the other stakeholders, the state could play an instrumental role in attracting youth into farming. The state can recognise and encourage young farmers through various schemes and incentives. Similarly, the usage of digital tools and other such technologies can bring youth to farming.



“We have failed to make agriculture attractive for the youth through local value addition. Through technology and certain processes, we can bring them to farming. Where there are already youth present, how do you ensure we retain, empower and attract youth?”

- Rijit Sen Gupta
Center for Responsible Business

Traceability of farmer’s produce in markets

Certification is an important component for farmers to access markets freely and sell organic products. Urban spaces are the major sites where such organic products are consumed. Traceability is a yardstick of authenticity in the market of agricultural products. So while it is difficult to get food-processing certification for small-scale farmers, stakeholders are trying to ease these processes.

Similarly, many brands make traceability a mandatory component in their value chain in order to gain trust among consumers. In this context, digital interventions must include this factor in the designing process and ensure easy entry of farmer's produce into the market.

Agri-business corridors: Farmer entrepreneurs

Digital technologies and entrepreneurship always go hand in hand. In the context of digital, farming can be made more economically viable by realising farmer-led agri-businesses. One such successful example is the program called "Joint Liability Groups" in Karnataka. In this program, rural startups were incubated at the Gram Panchayat level. These startups' problem statements would mostly draw from the local agricultural issues. This program also assists young farmers in deploying technologies on the ground.



"We provide technology and other resources to youth to enable farmers to use and benefit from technology and other elements. We also partner with credit lenders to provide finances to farmers. This program is called 'Agri-business corridor.'"

- Kishor Jagirdar

Co-founder, Infopace
Management Pvt Ltd.

Agro-advisory models

Agro-advisory models are one of the fundamental avenues of information sharing and knowledge building for agriculture. The majority of civil society organisations and other stakeholders are primarily involved in such models to empower farmers. With digital technology, these models have evolved into more sophisticated and sustainable models. However, there are many criticisms about their tendency to focus more on mainstream problems without adequate representation of issues of small-scale farmers.

Similarly, local knowledge systems, agro-ecologies and cultures must be acknowledged and incorporated in agro-advisory models.



“When we first started using agro advisories, we realised that advisory is not in their local language and is not very targeted. In India, every 10 kilometres, language and ecology change. So we realised this kind of generic advisory doesn't work for everyone.”

- Anshuman Das

WeltHungerHilfe (WHH)

Few agro-advisory models are successful in building hyper-local knowledge systems. ADEX (Agriculture data exchange) for the Government of Telangana is one such program which datasets not only serve farming but also its related sectors such as animal husbandry and fisheries. Also, an interesting element of this model is how they incorporated elements of data justice and privacy.



“We have included in our design elements of privacy, accessibility and other factors of democratisation of data.”

- Anantakrishnan

ADEX, Government of Telangana

Over the years, technology deployment has evolved in the agriculture sector from SMS and display boards to web pages and mobile apps.



“Earlier, we used to reach out to farmers through SMS and display boards at public places like panchayat offices and tea shops so farmers could see messages. Now we have developed web apps and mobile apps, which serve the agroecological knowledge of farmers and provide information on rural service providers/ input dealers and experts, respectively.”

- Anshuman Das

WeltHungerHilfe (WHH)

A qualitative approach to understanding local farming practices

Most digital technology solutions feed on quantitative data to design and deploy their products, including agri-tech services. However, in order to bring sustainability in agriculture it is necessary to consider ground realities which may not be datafied. Hyper-local knowledge systems mostly sustain themselves by passing on such practices orally or through lifestyle. Such local knowledge and practices can only be accessed through personal accounts, ethnography, and other qualitative approaches.



“Sustainability in agriculture is not always about quantitative data. It is also a qualitative experience.”

- Santoshi Srilaya Routhu

DDS

Zoning System: Hyper-local knowledge farming system

The Zoning system is a kind of grounded approach to understanding the agri-ecology of a particular geography. This approach can efficiently identify the farmer's problem and provide contextual solutions. Understanding elements ranging from soil type to naturally grown crops in a particular area is an important aspect of designing and implementing digital and technological interventions.



“Commodities like rice/paddy, which require more water, can be moved further out because they can be stored and dispersed later. Crops which require less water, like vegetables, are susceptible to damage and can be grown towards the point of consumption. So we need a more Hyper Localised Approach in terms of available resources.”

- Ejaz Salim

Grün Agro Ventures

Similarly, such hyper-local data of agri-ecology can give a bird's eye view of the zone or panchayat. Such methods help map different plots, farmlands and cropping patterns in a particular zone. This will also help farmers and other stakeholders to keep track of what is produced, and exported, usage of fertilisers and other such information.



“Farming should be contextual, whatever is naturally available should be grown. Unfortunately, what sells in Mandi, is what pushes these farmers to go for cash crops.”

- Osama Manzar

DEF

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List of Speakers

Osama Manzar

Digital Empowerment
Foundation

Ejaz Salim

Grun Agro
Ventures Pvt Ltd

Timmana Gouda

Whatsloan.com

Nivedita Varshneya

Welt Hunger HiLife

Abhishek Jani

Fairtrade India

Dorothy Gordon

WSA

Harsh

Alliance for Sustainable
and Holistic Agriculture
(ASHA)

Santhoshi Srilaya Routhu

Deccan Development Society

Peter Bruck

World Summit Awards

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European Union

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Solidaridad Network

Rijit Sengupta

Centre for Responsible
Business

Ashhar Farhan

Daana

Anshuman Das

Welt Hunger HiLife

P V Unnikrishnan

Information Kerala Mission,
Government of Kerala

Kishor Jagirdar

Vision Karnataka
Foundation

Pavan Kumar

WASSAN

Manar

Alhashash, WSA

Anantakrishnan

ADEX, Government
of Telangana

Participants

Jayesh Ranjan

Government of
Telangana

Peter Bruck

World Summit Awards

Amirullah Khan

Centre for Development
Policy & Practice

Laurent le Danois

European Union

Suresh Motwani

Solidaridad Network

Rijit Sengupta

Centre for Responsible
Business

Monimoy Sinha

Centre for World
Solidarity

Ashhar Farhan

Daana

Ramajaneylu GV

Centre for Sustainable
Agriculture

Anshuman Das

Welt Hunger HiLife

Nora

WSA

Laxmi

Emerging Technology
Wing, Govt of Telangana

Nabeed

CDPP

Ram Kumar

Centre for World Solidarity

Kishor Jagirdar

Vision Karnataka
Foundation

Anish Anthony

T-Hub

Anita Gurumurthy

IT for Change

Osama Manzar

Digital Empowerment
Foundation

Ejaz Salim

Grun Agro
Ventures Pvt Ltd

Himanshu Dhundia

Deutsche Gesellschaft
fr Internationale
Zusammenarbeit

Alok Kesari

Deutsche Gesellschaft
fr Internationale
Zusammenarbeit

P V Unnikrishnan

Information Kerala Mission,
Government of Kerala

Santhoshi Srilaya Routhu

Deccan Development Society

Dr. Arun

Technology Policy Analyst,
Wadhvani Institute of
Technology and Policy.

Apoorva

CDPP

Timmana Gouda

Whatsloan.com

Vijay Nadiminti

AgHub

Piya Bahadur

Peabody Soft

Nivedita Varshneya

Welt Hunger HiLife

Abhishek Jani

Fairtrade India

Nanda Kumar

Chetna Organic
Agriculture Producer

Dorothy Gordon

WSA

Harsh

Alliance for Sustainable
and Holistic Agriculture
(ASHA)

Manar

Alhashash, WSA

Anantakrishnan

ADEX, Government
of Telangana

Laya

Deccan Development
Society (DDS)

Pavan Kumar

WASSAN

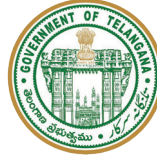
Joshi

Volunteer, WSA

Priya Bahadur

CEO, Merabills

Organisers



Partners

