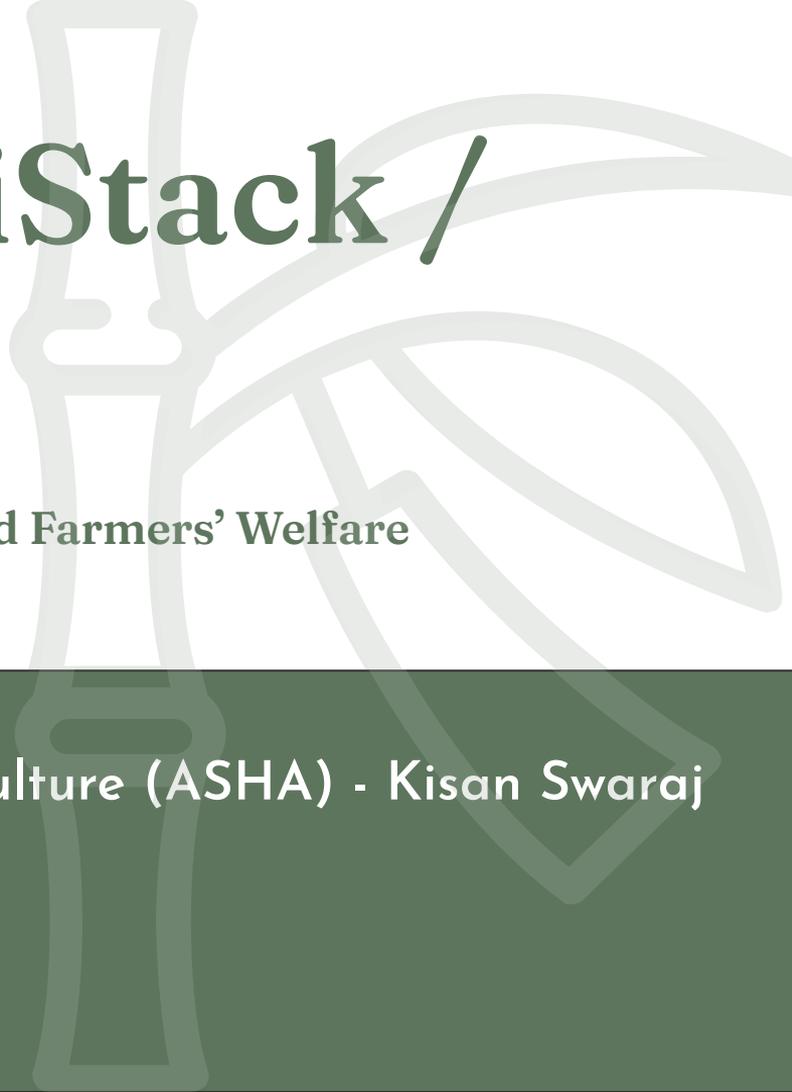


Inputs on AgriStack / IDEA



Prepared for the Ministry of Agriculture and Farmers' Welfare

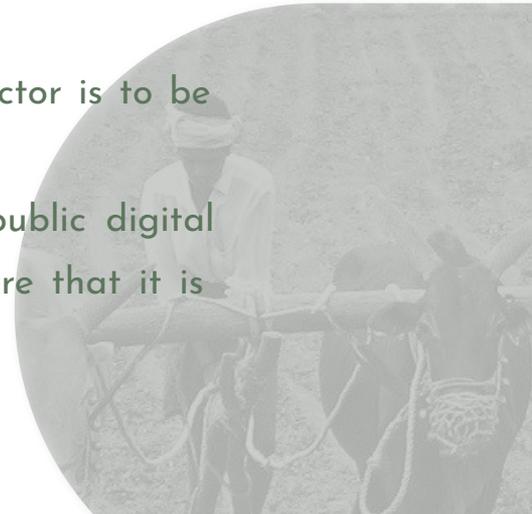
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How Agri Sector is Unique and Needs IDEA

- ❑ Agriculture is a unique sector of extraordinary social importance employing about 50% of the working population
- ❑ Public sector presence/intervention has always been needed to protect farmers' interest, internationally, they being a very weak party with almost zero economic flexibility, with all risks (weather, pest, diseases, markets, etc) borne by the farmer
- ❑ Like it was needed in industrial age agriculture, strong public sector presence and intervention is also needed for digital agriculture
- ❑ We understand that government's key objective in the agriculture sector is to be farmer-centric and enhance farmers incomes
- ❑ It is in this background that we welcome the basic concept of a public digital agriculture platform like IDEA, but we need to PROACTIVELY ensure that it is farmer-centric, and actually enhances farmers' control and incomes



IDEA: Agriculture Policy and NOT Technology Blueprint

- ❑ Avoid the trap of 'Code is law and architecture is policy'
- ❑ The key problem is presenting IDEA more as a technocratic formulation than a core agriculture policy document, that describes agriculture processes in a manner that an informed farmer can understand
- ❑ IDEA needs to be a core and fully integrated part of other legal and policy reforms in agriculture, including for agriculture markets, supply chains, MSPs, etc that is being undertaken. It cannot be a separate, parallel, unconnected track of its own.
- ❑ Treat IDEA as a core agriculture policy issue and framework, not basically a technology blueprint, which part can be a supporting addendum underlying and serving the new digitally-enabled agriculture processes laid down in the main policy document.
- ❑ This would then also determine the right stakeholders and participants in the process of development and execution of IDEA.

Needs More SOCIAL IDEAtion and Participation

1. The assumption is that just by providing a facilitative framework for building the network (with agritech entities), setting protocols, and collating data, farmer-centric digital agriculture will happen
2. Just look at whats happening with Uber/Ola drivers, traders on Amazon/Flipkart, restaurants on Zomato/Swiggy, small hotels on Oyo, even doctors on Practo, and so on, to know how the initial dream of a digital utopia for all can very quickly evaporate for the weaker parties
3. Farmers are much weaker than all these groups; unregulated digital agriculture, aimed merely at facilitating agri-tech will lead to disastrous results for the farmers will only end up creating new Ubers and Amazons of agriculture, with IDEA helping such monopolies quicken network development and data gathering.
4. The ONDC approach; half way solution for e-com, much less for the special conditions of agriculture
5. Taking a socio-political and not just technical view; at each step of making an IDEA like platform, it must be considered centrally, and consultatively, how it will contribute to resource and power distribution (whether away from or towards the farmers). if such an exercise is undertaken systematically, in a participative manner, most issues will get addressed, and IDEA has the potential to become a path-breaking pro-farmer intervention.

While we all know data is most valuable

We still VASTLY underestimate the value of data



Pandemic brought US airline industry to a grounding halt, and they could not raise loans to keep afloat. But Lo and Behold! They discovered the value of data with them was up to 3 times the book values of the airline itself.

- Delta stock value \$20.7 Bn, Value of its loyalty prog data: \$26 Bn
- United stock value: \$10.6 Bn,; Data value \$22 Bn
- American Airlines stock value: \$7 Bn, Data value: between \$18 to \$30 Bn

The airlines were able to take loans only because of the value of data with them. "It's the only reason American Airlines isn't in bankruptcy right now," said Stifel analyst Joseph DeNardi. "It's the only reason United isn't bankrupt, or on the verge."

-The Financial Times, Sep 16, 2020



John Deere is world's biggest manufacturer of farming machines. Today, they employ more software engineers than mechanical engineers. "The idea" they say "is to have each plant on a massive commercial farm tended with individual care – a process which requires collecting and analyzing a massive amount of data"

- From The Verge, June 15, 2021

Can we even imagine what the value of data with John Deere will be???

See IDEA as a Resource Arbitration/Allocation System

- ❑ In a digital society, the most valuable resources are intangible; network resources [who connects to whom, and under whose control) and data resources (the most valuable resource, which provides 'intelligence' on all actors and activities, say, in agriculture)
- ❑ IDEA platform will allocate public/community resources - network and data - to private players. This role of IDEA should be kept centrally in mind, and regulated as such in public interest, including taking from principles of fairness, equity and public benefit for government procurement, public leases, partnerships, etc
- ❑ Farmers must own their personal data, and non personal farm data, and they collectively own their aggregate data (both for 'harm prevention' and 'benefit sharing'). All should be in control of farmers and farmers representative bodies, cooperatives, FPOs, etc. Frameworks for this are needed
- ❑ Any resource allocation must follow principles of fairness, equity, reciprocity and protective discrimination - esp. if big players take network/ data resources from the common pool, they must also contribute. Frameworks are needed to be developed for this

Farmer outreach and collaboration as cornerstone for digital agriculture

"I just can't see how the benefit is going to get passed to us ...when you push it a bit harder, that's the whole supply chain, it's nothing to do with the farmer" - An Australian farmer

Based on surveys from other countries, farmers have several apprehensions about digital agriculture projects:

- ❑ Lack of transparency about the terms of use in data licences
- ❑ Agri data is regularly traded or disclosed to third parties, leaving farmers unaware of who knows the details of their commercial enterprises
- ❑ Concern agri-businesses derive the greatest financial benefit from their farm data, leading to the belief that there is little reciprocity, which in turn further reduces farmers' willingness to share data
- ❑ Thus, large scale information dissemination and sensitisation programmes regarding farmer's rights over their data and the methods to which they can be exercised must be undertaken.

Increased public sector investment is essential

- ❑ PPP model has not been found to reduce costs or increase inefficiencies. In fact, it has been the opposite, as the cost of capital has been higher, delays have been more, and project failures are more frequent. Private interests also begin to dominate projects, as rent seeking behaviour increases leading to higher costs for the public exchequer and higher prices for consumers.
- ❑ Agriculture has seen a significant decline in public investment and resources. The share of public investment in total agricultural investment has fallen significantly post liberalisation, going from 42.50% in the 1960s to 28.23% in the 1990s to 24.24% in 2005-06, and worsened to only 14.96% and 16.36% in 2011 and 2014 respectively.
- ❑ During this period, the share of indebted cultivator households increased from 25.9% in 1992 to 45.9% in 2013. Alongside this, debt-asset ratios for rural households increased from 1.78 to 3.23 in the same period - an increase of more than 80%!

Selecting themes and partners for MoUs

Execution before consultation: Implementation seems to have begun even before the consultation process began, through the signing of MoUs with several companies. Even these pilots could have easily waited until the broad digital-agriculture policy (and not just technical) framework was created in a participatory approach. Ideally, they should not have been undertaken in the absence of the data protection law.

There is also a need for a policy for sandbox experiments, which should not lead to undue favours and must be in line with procurement policies.

If at all pilots and proofs-of-concepts are the only way to begin, then let us:

- ❑ Invite ideas from farmers about the kind of digital services they would like an ecosystem to provide AFTER creating more awareness about IDEA / AgriStack
- ❑ In addition to “IT companies / Agriculture Companies / FPOs / Start-ups / Research Bodies” also invite (non-FPO) farmer organisations and civil society organisations to submit proposals for “PoCs / Use Case Scenarios / Layers around Farmers Database”.
- ❑ Such ideas may be more in public interest than just the creation and promotion of an online agri-tech private economy. The not-for-profit motivation in their case may keep the focus sharply on farmer livelihoods and digital rights.

Central role of Governments

- ❑ Thus, it must be clearly stated policy that the digital infrastructure being developed for the agriculture sector must be housed in, belong to and be controlled by central and state governments, irrespective of the outcomes of the MoUs.
- ❑ Data collection (by the centre from state governments and vice-versa) must have reciprocal obligations of data sharing, wrt private parties. It should not be that once state government share data with the central government, the data is not shared back with the state governments.
- ❑ Public sector must be mobilised to enter agricultural value chain in the digital space. For example, in France, thanks to digital tools developed by the National Institute for Agronomic Research (INRA), farmers from the Nouvelle Aquitaine region managed to reduce nitrate pollution in water and soil resulting from fertiliser use.
- ❑ Government of India should uphold Federalism. It should:
 - ❑ consult state governments;
 - ❑ not constrain states to adopt and implement this project by linking financing to the adoption of this project, or otherwise;
 - ❑ provide API access to state governments for the entire digital architecture being built, including to the data being supplied by state governments themselves

Restrictions on copying of raw data

1. Farmers must always have access to their own data
2. While there could be easy access to intelligence from data to other entities, this can be done without allowing them to copy the underlying data itself. This is important to ensure to ensure privacy and security of the farmers' data.

For example, Google has a significant amount of information about peoples' location, especially when commuting. However, it does not give out this primary, raw data to anyone. It has used this raw data to build in traffic information into Google Maps, which anyone can access through APIs. Hence, APIs give public access to the intelligence but not the underlying data itself.

Similarly, the government may allow anyone to build a service equivalent of Google Maps but the government must always have control over the underlying data and the service must run on government owned servers. Like Google does not share underlying location information, the government must not share raw data. Like Google Maps allow anyone to access the route and traffic intelligence through APIs, the government can allow anyone to access intelligence from AI / ML deployed on IDEA / AgriStack. But here also reciprocity principle should be adopted.

Do not conflate farm database with farmers database – they are different things

[F]armers' database" based on digitised land records will lead to problems and serious exclusions

The very first sentence of the office memorandum constituting the task force for the development of a centralised farmers' database and creation of a framework for the digital ecosystem in agriculture says, "... database based on revenue land records ...". This has three problems:

1. The state of physical land records in India is problematic. To a large extent, they are not up-to-date. There is an adage in computer science which goes, "*garbage in, garbage out (GIGO)*" - that is, if the underlying data is incorrect then all further analysis is moot. The 'single source of truth' for IDEA / AgriStack will not match the ground truth.
2. The process of digitisation of land records has often added to the problem than solving them. Errors, either inadvertent or otherwise, creep in during the process of digitisation further compromising the underlying data. These errors affect the already marginalised most often. Consider, for example, the issue of digital land records. The move towards the digitalisation of land records. Technical and administrative errors have been observed in the rollout of the SWAMITVA Yojana, while more malafide 'flaws' that have resulted in land grabs have been observed in drone-base land mapping projects in South America.
3. Even if the above two are fixed, defining farmers solely based on land records can lead to exclusion of: (a) women farmers; (b) sharecroppers and tenant farmers; (c) adivasis in shifting cultivation or those collecting of minor forest produce and NTFP; (d) agricultural labour; (e) poultry and livestock rearers; (f) fishers; (g) beekeepers; (h) pastoralists; (i) sericulture; (j) vermiculture. The National Policy for Farmer 2007 and the Doubling Farmers' Income report of 2017 both dispense the necessary condition of 'land possession' to be defined as a farmer.

Replicating KALIA at a national level to create an inclusive farmer database

- ❑ Since there is a good chance that, in addition to just being used for AgriStack / IDEA, such a farmer database might also get used for various other government programmes and schemes (in addition to PM-KISAN); this is an opportunity to build a more inclusive farmer database.
- ❑ Different categories of farmers (like those tending livestock or fisherfolk or agricultural labour as well as the actual cultivators as opposed to just the land owners) can be categorised accordingly in this inclusive database for more targeted government programmes and schemes as well as for appropriate advisories and services being offered by market entities.
- ❑ Capturing the names of the spouses of the farmers will address issues of invisible (women) farmers, including in the case of farm suicides.
- ❑ Several decision making officials in MoAFW, GoI as well as the present CEO, UIDAI are all familiar with the Odisha farmer database for KALIA and should try and replicate this experience nationally.

Grievance redressal and accountability

Page 21 of the Consultation Paper on IDEA talks about a building block for 'Regulations and Ease-of-Doing-Business'. In addition to being business-friendly, IDEA / AgriStack should not just be farmer-friendly but farmer-centric. Online cannot be allowed to become a space where offline rules don't apply.

There are no mechanisms to ensure that the economic interests of farmers are ensured whereas the revenue models that will be adopted for entities getting involved in this ecosystem are predictable. It is also unclear what happens to the farmers who are excluded from this ecosystem; there is no clarity on grievance redressal mechanisms and whether they would be farmer-friendly. For example, if a party buys a farmer's produce through AgriStack and does not make the payment, what should the farmer do?

Therefore, accountability has to be spelt out for various players including state departments and agencies and appropriate grievance redressal mechanisms (which is not just a call centre) need to be put in place.

Participatory governance through farmer representation

Just like physical marketplaces (like APMCs) are jointly governed by representatives of agriculturists, traders, hamals, government officials, similarly digital transactional spaces should also have participatory governance and must include farmer representatives.

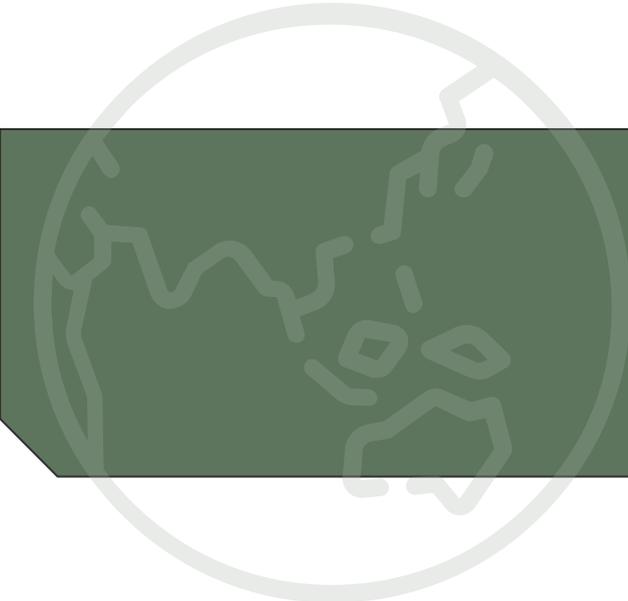
This is not just for the final governance of AgriStack / IDEA whenever it is ready to roll out but also during the ideation and formative stages. Specifically, going forward, there must be at least three representatives of farmer organisations in:

- a. Proposed Digital Agriculture Mission
- b. Steering Committee under Chairpersonship of Secretary MoAFW
- c. Advisory Committee
- d. Joint Monitoring Group of DoA&FW and DoLR



Conclusion - concrete requests to the government

1. Whenever the final IDEA Concept Paper is put out, it should be in language that is accessible to the lay person and an average farmer. It should be a (digital) agriculture policy document with primacy to agricultural development and farmers' livelihoods along with digital rights..
2. IDEA / AgriStack must be housed in, belong to and be controlled by government, without impinging on federalism.
3. In addition to all the work being done on land records, begin process of creating an inclusive farmer database with the following:
 - a. Going beyond farmers as only land title holders to real cultivators and even beyond cultivators (KALIA experience can be replicated)
 - b. Capturing details of cultivators in addition to land owners
4. MoUs: If at all this is the way to begin, then invite ideas from farmers about services they would like after creating more awareness about IDEA / AgriStack and proposals from (non-FPO) farmer organisations and CSOs also
5. Treat IDEA as a resource distribution system, and put restrictions on copying of raw data. Principles of equity, fairness, public interest and reciprocity need to be affirmed.
6. Build in existing regulations as well as grievance redressal and accountability into IDEA / AgriStack
7. Including at least two representatives of farmer organisations in:
 - a. Proposed Digital Agriculture Mission
 - b. Steering Committee under Chairpersonship of Secretary MoAFW
 - c. Advisory Committee
 - d. Joint Monitoring Group of DoA&FW and DoLR



Thank you

Questions?