FREE SOFTWARE MOVEMENT OF INDIA

30-06-21
Hyderabad

To,

Secretary ,

Department of Agriculture, Cooperation and Farmer Welfare,

Krishi Bhawan,

New Delhi

idea.consult-agri@gov.in

Sub: Response to Consultation Paper on India Digital Ecosystem of Agriculture (IDEA)

Dear Official,

I am writing this letter representing the Free Software Movement of India, a national coalition of free software and digital rights movements across India. This is a response from our organization to the consultation paper on IDEA-India Digital Ecosystem of Agriculture. At the outset we agree technology can be used to improve lives of various people and can also be used to improve agriculture. We have concerns on how this technology design and architecture can impact farmer lives. Our concerns are expressed below.

1. **Architecture Design and its Impacts**: We disagree with the current proposed architecture for IDEA. Architecture determines who and how technology affects various stakeholders. The current architecture is highly centralized creating large national databases. This architecture proposed for IDEA follows the India Enterprise Architecture and blindly implementing one architecture for every sector is not advisable. A decentralised architecture with no centralized information needs to be looked into. The consultation paper talks of building federated databases, "federated" means it is distributed and need not be decentralized. We propose you to redesign this architecture and involve more consultations on technical architecture design.

2. **Farmer's personal data and Privacy**: The current proposal intends to create a Unique Farmer Identity (UFID) for every farmer based on their Aadhaar data collected for various farmer schemes like PM-KISAN. The push for creating this unique identity is to create farmer profiles and to link their personal assets to this identity. This model of creating farmer profiles and sharing this data is a direct violation of their fundamental

right to privacy. The Supreme Court in *Puttaswamy Vs Union of India* (2017) judgement on Aadhaar has restricted the use of Aadhaar only to subsidies. This usage of Aadhaar data collected for specific purposes like PM-KISAN to be used for creation of UFID is a direct contempt of supreme court orders in Aadhaar judgement. The department is a mere custodian of farmer data and cannot share it to others without authorization from farmers.

3. **Land Digitization and Credit Scoring of Farmers:** The consultation paper does not mention land digitization, the working groups setup for implementing IDEA have referred to it as per documents obtained under RTI. This lack of information in the consultation paper on land data is concerning and if linked to IDEA changes the scope of this consultation. A separate consultation has to be carried out alone on land digitisation and its linkages to IDEA. The ministry has already written to state governments asking them to share all the land data with your department. Digitization of land is error prone and several farmers have been complaining about lack of grievance redressal across India. The intention of sharing digitized land data for financial purposes, for farmers, to avail credit based on land assets with faulty land data will lead to exclusion. At the same time tenant farmers who don't own land and cultivate crops on leased land will not have access to credit based on these land based credit scoring. It is important the ministry needs to assess the integrity of all land data before it implements this model and provide grievance redressal solutions.

4. **Errors, Fraud and Exclusions:** Technology as a tool can empower people and at the same time exclude people due to errors in software design and implementation. Projects like Aadhaar have around 70 error codes as mentioned in UIDAI's own website. This essentially means Aadhaar can fail in 70 different ways, excluding people from accessing subsidies or any other services built on top of Aadhaar. Any software system being built by the ministry needs to provide a complete list of error scenarios and alternative protocols to cause no exclusion. In the case of Aadhaar and integrity of data, the department should be aware, several people have used non-farmers details to claim benefits under PM-KISAN including the ex-UIDAI CEO RS Sharma. The clear distinction between what errors and fraud need to be made otherwise genuine farmers risk exclusion while fraud continues to happen.

5. **Data Integrity and Single Source of Truth**: Integrity of data is important as mentioned in earlier instances, faulty data can cause a host of issues like exclusion. The department proposes to use blockchain in certains aspects of the IDEA ecosystem and wants to ensure the Government becomes a single source of truth for data. This idea of a single source of truth while seeming great for data integrity is actually problematic for

farmers, who may want to get their data changed at multiple instances like faulty land records. The blind trust in data without any verification process to create a single source of truth information model is faulty and error prone. This approach needs a revisit and mutability of data through grievance redressal and established legal and technical processes need to exist.

6. **Free and Open Source (FOSS) Adoption:** There is a push by the Government of India to adopt free and open source software while building government solutions. While this is a great move, we find there is no source code being published in the public domain by any departments of government. The IDEA system is being designed to enforce a certain architecture and code enforces this architecture. This code becomes law and thus a closed source code of IDEA system only means people don't know what the rules of this ecosystem are. Not only should the ministry adopt free and open source software, it should provide the entire source code of the IDEA system. Merely adopting free and open source software helps it may still be insufficient as long as the architecture does not address issues of farmers, who are the primary stakeholders.

7. **Unequal Access to Data:** Data is the new oil and unequal access to this new resource can create its own problems. The ministry's current plans, part of IDEA, collects all the information about farmers and farming, providing it to the private sector via Open APIs. The ministry has already signed MoUs with several technology companies like Microsoft to share data without any authorization from farmers. There is unequal access to data by design, this needs to be rectified in the architecture itself. The ministry must obtain data from technology companies like Amazon, JioMart, Bigbasket and other consumer, agri distributor companies and give this information on consumer demand to farmers. The ministry also should invest in FOSS tools by sharing technology and training of farmers and their collectives to further analyze and use this data. Unilateral sharing of farmers' information only to technology companies cannot be the way. The potential for digital exists in the design of this technology architecture, everything must be done to address this at design stage. The ministry can explore creation of data trusts between farmers, companies and consumers to address these issues and give control over data to everyone in the ecosystem.

8. **Digital Divide and Localization**: India has significant digital divide with several issues related to access and localization of software systems. The ministry's lack of focus on localization is clear with the consultation paper being only made available in english. Farmers of India risk losing out with the force of digital technologies in agriculture because of lack of access to the digital technologies and localization of information. It is

the responsibility of the ministry to provide education of what IDEA is in all the languages possible and not limit themselves to 22 scheduled languages.

9. **Standards and FOSS Principles:** This consultation cannot be the end of public consultations related to the IDEA ecosystem. At every stage of designing of standards and for creation of principles of software development, the ministry must host further consultations. A standards body needs to be created where multiple stakeholders in the ecosystem need to have a say to determine what standards and software principles can be used to shape the ecosystem. Merely calling the ecosystem compatible with the FOSS principles without promoting the freedoms advocated part of FOSS is not implementation of FOSS principles. The central principle being source code being made public giving control to farmers.

10. **Representation of Farmers**: A top down technology architecture without consulting the individual groups who will be affected by this technology system will not benefit them. The conclusion of your consultation clearly explains this is about data economy and the ministry is using farmer's and agriculture data to create that economy. There is no representation of farmers and civil society as part of the working groups, committees framing these systems. This lack of representation of all stakeholders and unilateral promotion of technology companies will only cause further inequality to the already neglected farming community.

The responses to individual issue questions posed as part of the consultation are being provided part of an annexure.

With Regards,
Kiran Chandra
General Secretary
Free Software Movement of India

Annexure 1

Issues posed in Consultation

1. Vision and Objectives

1A – Is the idea of IDEA necessary for India' Agriculture?

While general technology focused on improving farming and improving agriculture is the need of hour, the plan for IDEA as a centralized architecture system is not a good idea. The idea of IDEA needs rethinking and it needs to focus on providing freedoms and uplifting India's farmer problems and not commodify them for the financial services industry.

1B- Is IDEA feasible?

The question is not of technical feasibility but more on whether it is feasible to improve the lives of farmers with IDEA. It is unclear whether IDEA will achieve that without representation of farmers. The current architecture does not do justice for the needs of farmers.

2. IDEA Architecture

2A – Is the 3-level Architecture proposed for IDEA appropriate?

The IDEA architecture confuses federated architecture as a form of decentralized architecture while collecting all the information into centralized databases. A decentralized architecture is bottom-up architecture, while IDEA has a top-down architecture. This current 3-level Architecture is not good and needs to go back to the drawing board with larger consultation on its design.

2B – Does IDEA capture the spirit of Federated Architecture correctly and adequately?

No. A federated architecture needs to be both distributed and decentralized. A centralized architecture while federated is bad and creates problems that have single point of failures. A centralized architecture also leads to a centralized governance structure, which is against India's federal principles. Federated architecture is not federal, where states have their own control and say in various matters. Agriculture is a state subject and this architecture doesn't address the state's concerns.

2C –IDEA Architecture is designed in terms of Building Blocks. Is this appropriate?

A modular architecture is a good software design principle, but a modular architecture can also lead towards a centralised control architecture. One can build anything with a host of modules. The IDEA architecture is further a sub-module of another centralized architecture of India Enterprise Architecture. It is important to understand modular architecture does not lead to a decentralised economic activity and planning.

3. IDEA Standards

3A – Is the approach to development and adoption of Standards proposed in IDEA appropriate?

Standardisation as a process is an important part of engineering and provides efficiency, But leaving the standard making process to only dominant players in the ecosystem only paves the way for monopolization and alienation of large sections of commons. Faulty standards can also create their own problems like security and privacy issues. A standard being proposed by companies like Google or Apple does not mean it is good for other smaller companies and society. Standardisation is often proposed as part of multi-stakeholders bodies and participation with multiple views ensures standards are not unilaterally helping a select set of participants of the ecosystem. An open standard making process has to be open to all stakeholders, the current process is not and is actually a closed process. The current approach of development and adoption of standards is highly unacceptable and new models with multi-stakeholder setups need to be created. Specially which will take views from farmers, who are the primary stakeholders.

3B – Is FAIR feasible? [Fast Agriculture Interoperability Resource]

There is very little information being provided to understand what FAIR is except it is supposed to be a standard. Clearly this is the problem with the current proposals of standards which are not being explained to everyone but being made standards. The standard making process needs its own standardised templates which explain its goal and technical process. There are no engineering or technical details of the FAIR standard. We demand the supply of further details of FAIR in a separate consultation.

4. IDEA Implementation Framework

4A – IDEA proposes development of a PPP framework for its implementation. How to develop such a framework?

The idea of Public Private Partnership often ignores participation of people, in this case the farmers. It is important that this partnership of implementation of IDEA should go beyond PPP and involve normal people. This can be achieved by making the source code available and allowing individuals to contribute to the project.

4B – Can IDEA attract/ facilitate fresh investments in Digital Agriculture?

Yes, IDEA will bring in fresh investments into the IT sector but it may not bring any more investments into agriculture and for farmers. The dominance of digital components is a feature and a threat at the same time which will create its own wealth inequality for farmers already affected by digital divide. The central essence of IDEA and its architecture favour large corporate farming entities. In the Indian context with a vast level of fragmented land and the very existence of a large population of small and marginal farmers demands investments in designs of technologies for small land holder farms.

5. Agri Data Economy

5A – Is Agri Data Exchange[ADEx] necessary?

A data exchange portal or system while necessary, it cannot be proprietary. An open data portal is a necessity but not sufficient to be a level playing field between unequal players like individual farmers and large corporations. Any data that is being shared needs to be available to all players in the ecosystem and cannot be made available to only private companies which can afford it. It is the responsibility of the ministry to provide market related information to the farmers and publish non-personal data for all farmers.

5B – What should be the implementation model for ADEx?

An open data portal with all information being open to all is the best implementation model for Agri Data Exchange. The portal should have additionality functionalities to process and analyze this data for farmers to help them with level playing fields.

5C – What are the regulatory requirements for ADEx?

The ministry should ensure the information being published part of the portal should be in compliance with various aspects of IT act, data protection law and the right to privacy judgement of the supreme court.

6. Innovation around IDEA

6A – Is IDEA Sandbox [I-Box] necessary?

A regulatory sandbox while being innovative still needs to learn from the implementations part of the sandbox and propose regulations to approve some of the ideas from the sandbox before they are implemented. The idea of a sandbox is to test ideas and if they fail then reject them. Several regulatory sandboxes in other countries implementing advanced technologies like driverless cars have always monitored them very closely and ensured they do not cause any harm. It is important for the ministry of agriculture to ensure the ideas from regulatory sandboxes don't cause harm to farmers.

6B – What should be the implementation model for I-Box?

The regulatory sandbox needs to be open with all the details of status of various sandboxed ideas being made public to everyone including the farmers. The principles of FOSS can be implemented for I-Box to build a sandbox.

7. Other Suggestions

Please refer to all the suggestions mentioned in the main letter as other suggestions.