

# Knowledge Swaraj, Agriculture and the New Commons: Insights from SRI in India C. Shambu Prasad<sup>1</sup>

## Abstract

This paper seeks to discuss ideas around Knowledge Swaraj and explore how knowledge commons can further the idea of autonomy of communities and the agenda of promoting justice (including cognitive justice), sustainability and plurality. We suggest that discussions on knowledge commons and innovation have hitherto been restricted to the digital commons and the open source movement and need to be explored more fruitfully in other traditional domains such as agriculture. What, if any, are the new commons in agriculture and what would be the public policy implications of taking new commons in agriculture seriously? Can the new commons in agriculture open up spaces for democratizing science and innovation policy?

We seek to explicate this through the case of the SRI India community and explore the importance of designing and co-evolving, both online and offline, an architecture of participation in digital communities. We suggest that while tools such as Social Network Analysis or SNA can be helpful in understanding networks, especially online communities, it is important to link these studies to the broader discussions on knowledge as commons and the potential of communities to work towards knowledge swaraj.

**Key words:** Knowledge swaraj, knowledge commons, agriculture, SRI, open innovation.

## I

### KNOWLEDGE COMMONS AND KNOWLEDGE SWARAJ: THE MISSING CONNECTION

Gandhi's 100 year old document on self-rule *Hind Swaraj* (1909) merits reconsideration in the light of discussions on the knowledge as commons as opposed to proprietary knowledge, a clear call for greater peoples participation in science and technology, and current climate discussions that reemphasise the finiteness of the planet. Much of the commons literature has bypassed potential theoretical leads and practical insights from Gandhi's writings and the shaping of his institutions. The recent attempt by scholars and activists to present an S&T manifesto – Knowledge Swaraj – takes further the critique by Gandhi of modern professions and its separation from peoples knowledge by exploring different forms of expertise and how it could be enacted.<sup>2</sup> Studies on Gandhi's views on science and his novel approach to

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<sup>2</sup> Knowledge Swaraj – An Indian Manifesto on Science and Technology is available at <http://kicsforum.net/kics/kicsmatters/Knowledge-swaraj-an-Indian-S&T-manifesto.pdf> . The papers by Sastri on oceanic circles and Wiebe Bijker on plurality of knowledge and democratic governance of S&T in the panel make connections between Knowledge Swaraj and Knowledge Commons that we expand on here in this paper.

shaping institutions (Shambu Prasad 2001, 2002) highlight how Gandhi posited an endogenous model of innovation in which participation by people was considered critical in shaping technology. Gandhi's conception of the community worker in the *khadi* movement shows how an 'expert' (in khadi, village industries, sanitation etc.) can and should create a knowledge commons. Innovation studies today confirm the role of user-driven and open innovation (von Hippel 2005, Chesborough 2003) and reiterate the idea of innovation as a social process. More recently Levine (2007) in discussing collective action, civic engagement and knowledge commons has highlighted the beneficial role of commons for civil society and democracy. The commons, he suggests, permits people to be creative as citizens – to contribute things of value to the commonwealth. It is an antidote to consumerism and to passive forms of citizenships.

Yet public policy in India has shown a tenuous relation between knowledge and democracy (Shambu Prasad 2008). Though Indian planners have placed high emphasis on knowledge through science and technology (and more recently innovation) in the Five Year Plans, the planning processes seem to ignore or by-pass the potentially large contribution of peoples knowledge (knowledge by and of the commons). They continue to be policies driven by scientific expertise from state agencies and the market. A recent draft innovation law of the Government of India (2008), for instance, has no mention of the poor, grassroots, community, civil society or more broadly the commons. In this paper we take further the idea of commons by extending the idea of autonomy in some of the discussions on commons to the Indian idea of *Swaraj* or Self-Rule.

We suggest that the seemingly independent strands of knowledge swaraj and knowledge commons have in fact much to benefit through collaboration. Current discussions on new commons has unfortunately been restricted to technology-driven, human-made common pool resources largely focused on the internet and open source movements in software and more recently in drug discovery. This paper suggests first that the transformative socio-technical movement of new commons is less understood and appreciated. Secondly, the underlying philosophy of transformation of knowledge that open source movements hint at, can and have been applied in agriculture too. Third, this vision of knowledge commons and knowledge swaraj has policy implications. Complex challenges such as climate change and resource conservation would require modes of participation that go beyond the much touted Public Private Participation models of research and innovation. Public policies need to enable facilitation of knowledge commons that enhance the capacities of communities, professional experts included, to cope with uncertainty and manage risk.

The internet has reconstituted knowledge in society and has created new hierarchies of knowledge on the one hand but has also opened up spaces for traditional communities and promoters of indigenous knowledge by offering

new opportunities for knowledge dialogues.<sup>3</sup> Discussions on knowledge are not just a question of access but also of hierarchies and power. This is especially so when there are different, and often, competing knowledge systems that coexist – indigenous knowledge and modern science. Ensuring access can often reduce choices for communities by providing greater access, and power, to the dominant modes of knowledge. Knowledge swaraj is about providing cognitive justice that can enable plurality of knowledge systems and we shall show through the case study of SRI how knowledge commons can enable knowledge dialogues between different forms of knowledge and in the process produce new knowledge through a dialogue on equal terms.

## II

### **SRI AND THE NEW COMMONS IN AGRICULTURE**

In agriculture the dominant system is the one that favours an input-centric model following the Green Revolution (GR) that has increased food supplies by providing higher inputs of fertiliser, pesticides and irrigation water in favoured agroecological regions on responsive high yielding varieties. The last few decades in India has seen stagnation in yields due to this approach with compounded problems of waterlogging, salinisation, rapidly decreasing soil fertility and groundwater and increasing amounts of subsidies on fossil based agri-inputs that is turning out to be an economic, ecological and social disaster. Over 200,000 farmers are reported to have committed suicides, often in the GR areas, with agriculture becoming unremunerative. Climate changes and erratic rainfall has compounded the problem. The conventional approach to the farming crisis has been effectively more of the same – genetically engineered crops that would do better than the earlier hybrids and high yielding varieties or New Plant Types in rice. Independent of whether the promise of these varieties for food crops, especially for small and marginal farmers, it is clear that the farming community faces increased dependence on external sources and has lost its autonomy.

In such a context it is remarkable that an alternative such as the System of Rice Intensification or SRI has emerged and accepted by the farming community that today is being practiced by over 250,000 farmers with little formal support (active resistance too) from the agricultural establishment that has seen encounters termed as ‘rice wars’. SRI is a counter-intuitive set of ideas and insights that originated in Madagascar through the systematic experimentation by a French priest who put together six principles of improving rice productivity without changes or improvements in variety. This system has spread rapidly across the world since 1999 when it first moved out of Africa and is now demonstrated in over forty two countries by over a million farmers. By creating a better growing environment (both above and below ground), SRI improves yields, enhances soil health, and reduces the need for inputs (seeds, water, labour). SRI can work for any variety that a farmer uses, thus enhancing choice for farmers.

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<sup>3</sup> For more on this see “Internet and the shifting grounds of knowledge” by Avinash Jha and “Reinventing the Indian university: Arguing from a lokavidya standpoint” by Sunil Sahasrabudhe. <http://www.vidyaashram.org/publications.html>

SRI is a civil society innovation and has been promoted as an open source system and is a good example of a knowledge commons. At the heart of the spread of SRI, both internationally and in India, is the philosophy that knowledge should be common property, not something locked up or possessed in a few institutions or a few hands and heads, whether public or private. From its inception, knowledge on SRI has been freely available as the promoters of SRI have shared ideas with farmers and researchers alike, in keeping with the motivation of its originator, Fr. Henri de Laulanié, for whom SRI was a labour of love.

In India, many civil society organisations have accessed information on SRI through their respective networks much earlier than research organisations. The internet has indeed played an important role in enabling this flat architecture of a knowledge commons. Contemporary models of extension advocate the use of ICT, setting up often expensive expert systems wherein a doctor or agricultural scientist in a laboratory transmits knowledge to a patient or farmer. The spread of SRI knowledge, on the other hand, has been facilitated by knowledge transfer on a more open platform that has not privileged any particular expert. It treats knowledge not as a finished product to be dispensed, but as a work in progress, involving two-way flows.

A manifestation of this approach to 'knowledge as commons' is seen in the way that knowledge is organised in the SRI website: <http://ciifad.cornell.edu/sri/> . SRI actors have made extensive use of this freely-available resource. It is common to find SRI extension manuals in India and elsewhere having pictures of Sri Lankan women doing transplantation, a Cuban, Afghan or Malian farmer comparing his SRI and non-SRI plants, or demonstrating differences that SRI practices can make. These pictures have been copied and used many times, around the world, without any creative commons license! The SRI website has only posted information that is agreed to be in the public domain.

It is not surprising to find a lot of material from India in the SRI website. An Indian website on SRI (<http://www.wassan.org/sri/>) is hosted by a Hyderabad-based organisation WASSAN, which initially used this as an extension of its own resource centre but it has been accessed extensively by people in India and elsewhere. Its section presenting and evaluating different weeder designs has become a worldwide resource for SRI practitioners. The important aspect of this knowledge flow is the non-exclusivity, or rather the complementarity. No organisation believes in being *the* single source or clearing house of knowledge, but rather one of several diverse ways for spreading knowledge. SRI resource materials reflect this diversity, with each organisation developing its own CDs, training programmes, etc. giving a local flavour to knowledge. Manuals, reports, etc. are posted on the worldwide web for others to learn from and borrow from, making the SRI movement both international and quite localised.

## **Associational Commons and SRI**

In discussions on knowledge commons Peter Levine favours associational commons over libertarian commons. Associational commons are open to their own members but may be not be open to the public at large. Yet, he suggests that associational commons are the heart of “civil society” and an important part of the democratic use of knowledge commons in the future. The SRI community in India did not set out to establish an associational common in the formal sense but has created one as part of its complex evolution. By 2007 India had a sophisticated SRI community with some dissenting scholars participating in the ‘rice wars’ debate internationally, civil society organisations leading practice, research being led by extension in some cases and farmers already showing several innovations in SRI (Shambu Prasad 2006, 2007). It was quite paradoxical that despite such presence internationally there was no open source forum or platform that SRI enthusiasts could be part of. Oddly two Indians were members of an SRI Nepal e-group.

A recent application and use of the internet is the use of electronic groups. The SRI India group (<http://groups.google.com/group/sriindia>) is one of the most popular sources of information on SRI today. It was established following the national symposium on SRI at Agartala in October 2007 and was initially set up as a way of giving the hundred partners of an Indian donor agency, the Sir Dorabji Tata Trust (SDTT), a quick, low-cost, easily accessible means of discussing SRI and sharing experience. Today the group has 400 members, has had over 3000 discussions, and has a majority of members and contributors in states outside those where the Trust operates. A true knowledge commons, the moderators receive requests from all over the world.

The group has evolved its own norms and came out with a formal description one year into its functioning.<sup>4</sup> The group started with close to a 100 members in 2007 and has had an addition of 128, 94 and 74 members respectively in 2008, 2009 and 2010. Increased activity and flow of information within the group has attracted many others seeking membership. This originally started with some private sector players keen to sell their weeders and markers but soon expanded to include farmers keen to have more information on SRI and many SRI enthusiasts. An analysis of the categories of people who are involved in the e-group indicate the group’s extremely diverse nature. Of close to 300 members for whom data is available an overwhelming part (57%) of them belonged to civil society organisations including those promoted by private foundations, farmers including field level trainers constituting the next largest group followed by government agencies and agriculture department officials, researchers (state universities, national research centres and international centres, social and natural science professionals) and some private manufacturers.

The group is diverse and accommodates different viewpoints and is open about conflicting viewpoints. There are members who support hybrid rice and mechanisation, and others who vigorously champion traditional varieties,

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<sup>4</sup> “This e-group is for promoting information and discussion amongst farmers, civil society practitioners, researchers and others interested in research and application of the System of Rice Intensification (SRI) as a tool for attaining food security in India”

organic methods, and hand tools. Yet, the group has shown tremendous participation in sharing and creating common resources. This was called upon recently when the National Food Security Mission (NFSM) was engaging with civil society organisations, and there was an urgent need to quickly put together information on the number of farmers using SRI methods and their acreage. A database was created in a very short span of time online across the country. Such a task would have otherwise taken weeks, if not months. It would be folly to see the use of internet in isolation, however. The SRI network uses it as a tool for networking, learning and sharing, and it is not a substitute for real extension work in the field. In fact, some of the more active SRI promoters have little time and access to the net and cannot contribute to the e-group, but yet they do keep following the conversations. As a continually evolving network, the SRI India e-group is a set of people from diverse backgrounds and regions. There has been an increasing participation from researchers and academicians from other countries too like USA, Netherlands, Pakistan, Nepal, Madagascar etc.<sup>5</sup>

It can be noted that the group has now been owned by the SRI India with good participation from states such as Andhra Pradesh and Tamil Nadu that are not supported by SDTT. The demand for participation in the group has been increasing due to its visibility in the net. The managers receive about 10-15 requests a month of which about 5-6 are accepted after a process of corresponding with the member and to prevent spams or by providing relevant information. Rules are simple and members are encouraged to think about why they would like to join the group and what they might contribute to the community before acceptance. The SRI group can be seen as an associational commons following Levine (2007).

The all time top posters are a good indicator, which actors are the most active ones on the SRI Google Group: Nemani Chandrsekhar from Andhra Pradesh works with WASSAN, a CSO. Nemani joined the group on January 8, 2008 and has since then been the top poster and information input provider to the group. He frequently scans various print media and browses the internet for SRI related news and recent developments and thus feeds the group with up to date information on a daily basis. He was honoured with a Certificate of Appreciation at the Knowledge in Civil Society (KICS) general body meeting in January 2009 and was congratulated openly when he posted his 1000<sup>th</sup> message to the group in November 2010. Nemani's contribution to the Group has many of the features of associative commons discussed by Levine. Nemani is not an expert on SRI and has no formal agricultural training or communications expertise. He has visited SRI fields a few times at best but has been able to keep the group alive by providing up to date information from the internet and connecting people who need information – a new farmer, an organisation that has just joined and wanting ideas – with those in the group who have it with necessary weblinks.

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<sup>5</sup> An analysis of the group composition in February 2009 by states of India showed that a surprisingly large number of members were from the economically poor and less networked state of Orissa (34) followed by the better connected Andhra Pradesh (26) and Delhi (24). A more recent analysis August 2010 has shown an increase in numbers from Maharashtra (42) (upstaging Orissa (40)) AP (39) and Tamil Nadu (22).

The group is but a microcosm of the larger SRI community in India that has over 250,000 farmers, over 250 civil society organisations promoting SRI, 30-40 government and donor agencies and a similar number of researchers working on SRI. As an associative knowledge commons it has contributed to the shaping of agricultural debates and policies in India. Such a diverse group working on agriculture is rare and is representative of a new knowledge commons in agriculture. While there continue to be issues relating to the management of the SRI India e-group with regard to the absence of serious discussions and more of it being an information group the willingness to share and the ability of the commons to self-organise and moderate and maintain independence from any single donor objective is noteworthy.

The e-group needs to be seen as part of other initiatives and institutional innovations that the SRI community has used to promote knowledge commons. One such was the promotion of learning alliances, first in the state of Orissa and later tried out with local adaptations elsewhere. The spread and scaling-up of SRI have also demanded new alliances between local, regional, national and even international actors, on the one hand, and newer alliances between research and non-research actors. Farmers and civil society organisations in Orissa learnt SRI from the neighbouring states of Andhra Pradesh and West Bengal that are relatively more advanced with regard to their research and extension systems and ahead in terms of SRI practice. Based on the insight that for SRI to be rooted in Orissa it would require formal systems to learn and adapt, a novel mechanism was attempted where an academic social science institution (XIMB) played a facilitating knowledge broker role. A workshop provided an opportunity for farmers, civil society organisations and research actors to share their SRI experience without one privileging the other. With the Department of Agriculture keen to extend SRI it was presented with a model where expertise lay beyond conventional actors – state agricultural universities and research centres. The Director had to evolve a mechanism that would involve others in the learning alliance. Follow up of the workshop through unconventional research which ensured that student (and other) researchers helped the actors tell their story but gave the main actors credit (Shambu Prasad, Beumer and Mohanty 2007) and a follow-up a year later through another research that was not definitive but meant to increase conversation on common issues (Shambu Prasad, Mohapatra and Misra 2008) were other ways by which the knowledge commons was promoted.

Experiences in Orissa with a new kind of multi-institutional, multi-level, cross-sector 'learning alliance' have shown that working within complex and changing environments requires public 'spaces' where continuous knowledge dialogues are facilitated, leading to action plans and enabling public policies that are grounded in field realities. In this process, learning from similar actors in other states, regions and nations can play a big role. It is not uncommon to see state-level workshops where government officials, researchers, civil society organisations and farmers from several states participate together.

The SRI effort in India is now seeking to extend the knowledge commons at the national level with efforts underway to promote a National Consortium on SRI that would involve several leading civil society organisations, key researchers from research centres that have taken on SRI, agriculture department officials including extension agencies and donors including the National Bank for Agriculture and Rural Development (NABARD), the NFSM etc. Several rounds of consultations have led to some buy-in from actors though much needs to be done. Sharing of information continues though and a state level consortium in Andhra Pradesh has come about and is in operation.

### III Public Policies and Knowledge Commons

There are several insights and lessons for agricultural innovation and knowledge commons that emerge from the surprising spread of SRI in India. The most important has been the sense of hope being infused into the distressed farming community who now feel they have greater say and autonomy in production processes, countering an earlier state of dependence on external inputs. Knowledge Swaraj has in this case meant that farmers are able to use water better, improve their soil fertility, and now know how to 'play with the monsoon,' saving their crops when rains are delayed. Transplanting can now be better timed and even repeated to cope with climatic stress. As SRI's productivity gains are derived from new knowledge and its application, rather than expensive material inputs, it necessitates changes in extension processes from material provisioning to inter-personal interactions, observing, experimenting, evaluating, encouraging, etc. Farmers function more cooperatively and collectively, with self-organisation building the foundations for on-going innovation. If, as is being increasingly realised, innovation is a social process then public policies need to allow for creation of knowledge commons, value dissent rather than exclude dissenters, and recognise existing knowledge hierarchies and find ways of dealing with them.

In SRI knowledge commons is being created at several levels – on the field the knowledge of SRI (and implements too) is being shared amongst farmers through master trainers and resource persons from within the community. Similar knowledge commons seem to operate at the district, state, national and international levels. The internet has enabled a facilitating role in creating the commons. Thus rather than look at knowledge commons only as digital exchanges and access the latter, including the internet, need to be seen as enablers in promoting open innovation and strengthening knowledge democracy.

The fluid architecture of learning in SRI without profit as a driver has not been witnessed often in agriculture. Often it is, typically the private sector that drives or, innovations but SRI shows that knowledge commons can play the same role more effectively. Current conventional wisdom in agriculture and rural development seeks to promote vigorously public-private partnerships or PPPs, a euphemism often for privatising public extension services. SRI brings

to the fore the fourth (or missing) P in these partnerships, namely **people** or their communities.

The idea of a knowledge commons and its application has not found much application in agricultural innovation even as this concept has often been discussed in forestry, fisheries, etc. Historically, agricultural technology has been generated with public-sector support and has been freely available to anyone who would utilize it, purchasing whatever 'hardware' is needed but with 'software' in the public domain. Why is it that discussions on new commons omit possibilities from the agricultural sector and are restricted largely to the urban commons or internet? This is an area that public policy needs to play closer attention to.

India has just announced its National Innovation Council that has come out with a roadmap of innovation for the decade ahead. Though very much focused on corporate rather than social innovation there is a recognition that the web/internet offers unprecedented opportunities and relates to openness, accessibility, networking, connectivity, democratization and decentralization. It is however a moot point whether these ideas of inclusive innovation is possible without greater participation of people and a thrust to create more knowledge commons. The SRI story suggests that ideas of Knowledge Swaraj can come not just from the fancy export earners – IT or BT – but also from the large number of farmers and civil society organizations at the grassroots working together.

We have here tried to show that there is a case for closer examination of the ideas of 'new commons' in agriculture that are emerging in unexpected and diverse ways. Much more research on this might be required that generates a better understanding of how networks function (tools such as social network analysis can be used) and how they could be promoted. We suggest that greater attention be given to knowledge (not just information) flows, and to the processes of co-creation of knowledge. The complex challenges of agriculture in the twenty-first century require newer lenses for viewing reality, especially its changeful dimensions. We have tried showing through the case study on SRI that newer innovation architectures are available for making progress not limited to laboratories, but changes that reach and are in fact improved as well as applied at the grassroots. Researchers are welcome to participate more pro-actively in this emerging new commons movement by exploring how this could be extended to other domains beyond SRI.

Nobody knows where these diverse streams of innovation will take the agricultural sector, or if and where they will end. In an era when high-technology innovation in agriculture is so celebrated, and heavily invested in, still with limited promise for those agricultural producers who most need to raise the productivity their restricted resources, it is timely to consider the possibilities that this 'new commons' is opening up not just for agriculture but for knowledge swaraj promoting the ideas of justice, plurality and sustainability.

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