

Empowering Local Self Governments for Mainstream Biodiversity in Sustainable Development of Kerala

**N. Anil Kumar &
Suma Vishnudas**

This paper discusses the context and the efforts of M.S. Swaminathan Research Foundation (M.S.R.F.) in helping the elected Local Self Governments of a few Grama Panchayaths of Wayanad district of Kerala for mainstreaming the biodiversity concerns in the local development. This paper builds upon the idea of multi-level approach and processes needed from people to the policy makers for mainstreaming biodiversity. The gaps in awareness and institutional structures at different levels to achieve this goal are discussed in this paper. The need for consistent efforts to inculcate biodiversity conservation and sustainable use as a developmental agenda in the minds of elected representatives, rather than an alternative idea away from the routine development processes is emphasized here.

Introduction

Biodiversity is life, and it is the most dynamic element of a bioregion for food and agriculture production. The Convention on Biological Diversity (CBD) came into force in the year 1992 signed by 168 countries and agreed upon the conservation of biological diversity

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

considering it as a global asset. Conservation, sustainable use of the components of biological diversity, and the fair and equitable sharing of benefits from the use of genetic resources are the objectives of the CBD. The convention recognizes, biological diversity as *people and our need for food security, medicine, fresh air, water, shelter and a clean and healthy environment than plants animals and micro-organisms and their ecosystems.* (www.cbd.int/intro/default.shtml)

Biodiversity has a critical role to play in dealing with two principal issues that limit social progress - climate resilience and under nutrition. According to FAO, since 1900s, some 75 % of plant genetic diversity has been lost as farmers worldwide have left their multiple local varieties and land races for genetically uniform, high yielding varieties (FAO, 1999). Hence, it is important to place high on the development agenda, leveraging biodiversity for overcoming the climate related biotic and abiotic stresses, as well as bringing nutrition in food production and consumption, and thereby addressing the issues of climate resilience and under nutrition.

The second goal of 2030-U. N. Sustainable Development Goals is to "End hunger, achieve food security, improve nutritional status and promote sustainable agriculture". One of the targets under goal 2 is to "ensure maintenance of the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species through soundly managed diversified seed and plant banks at the national regional and international levels by 2020". Another target is to promote climate resilient agricultural systems all over the globe¹. Realizing the Sustainable Development Goals requires changes in institutional environments, information delivery and governance. Investments in biodiversity conservation need to be relooked. Above all capacity development at various levels is very important to achieve the targets.

Biodiversity mainstreaming is a long term iterative process of getting biodiversity concerns fully reflected in the policies, plans, and activities of the governance systems at local, sectoral or national levels

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

in order to achieve the outcomes that concomitantly benefit biodiversity and development. It is as much a political and institutional issue as it is a technical one, requiring a process of changing mindsets to policy frameworks and practices. After the Second Global Plan of Action for Plant Genetic Resources (PGRs) for food and agriculture and several of the decisions of the CBD-CoP decisions, necessary policies and measures were put in place by the Government of India to promote conservation and sustainable use of country's biodiversity. All the countries who were party to in the agreement of the Convention of Biological Diversity (CBD) have developed national strategies for conservation and sustainable use of biodiversity. Some specific measures undertaken by India to motivate local communities and institutions engaged in biodiversity management were enacting two national level legislations- Protection of Plant Varieties and Farmers Rights Act 2004 and Biodiversity Act 2002. India developed its National Biodiversity Action Plan in the year 2009² and that identifies the constraints and threats pertaining to biodiversity conservation. India has developed a systematic plan to achieve this target by a proper institutional structure starting from MoEF&CC, Planning commission, National Biodiversity Authority, State Biodiversity Boards and Biodiversity Management Committees at Panchayath levels.

The Biodiversity Act & Rules mandate establishment of Biodiversity Fund at national, state and local levels for "the management and conservation of heritage sites; compensating or rehabilitating people from such designated heritage sites; conservation and promotion of biological resources; and most importantly "socio-economic development of areas from where such biological resources or knowledge accessed..." The National Biodiversity Authority, State Biodiversity Boards and the local level Biodiversity Management Committees are the institutions designated under the Biodiversity Act 2002 & Rules 2004 to advise/facilitate respective governments on all matters related to the biodiversity management. The prime responsibility at present for them is to help the governments to achieve the 12 National Biodiversity Targets and

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

thereby contributing to achieve the Global Biodiversity Strategy Plan and Aichi Biodiversity Targets by 2020.

This paper discusses this context and the efforts M.S. Swaminathan Research Foundation (MSSRF) in helping the elected Local Self Governments of a few Grama Panchayaths of Wayanad district of Kerala for mainstreaming the biodiversity concerns in the local development. This paper builds upon the idea of multi-level approach and processes needed from people to the policy makers for mainstreaming biodiversity. The gaps in awareness and institutional structures at different levels to achieve this goal are discussed in this paper. The need for consistent efforts to inculcate biodiversity conservation and sustainable use as a developmental agenda in the minds of elected representative, rather than an alternative idea away from the routine development processes is emphasized here.

Mainstreaming biodiversity in development

The Biodiversity conservation programme in the state needs to be oriented towards helping the elected Local Self Governments to mainstream biodiversity in local development and thereby achieving the various conservation goals. So, it is very important to discuss and identify the priority areas for the Biodiversity Boards vis-à-vis the 2020 National Biodiversity Targets. The Biodiversity Board of Kerala state, which started functioning in the year 2004 is considered as one of the best performing boards of the country. However, some of the important questions that needs to be addressed by the State Biodiversity Board are: Whether this body has to promote integrated conservation where *ex-situ*, *in-situ* and on-farm methods are combined and benefitting conservation and livelihoods simultaneously? How do we engage the local communities in the priority setting of biodiversity management? Will the preparation and maintenance of People's Biodiversity Registers be adequate? What are the ways and means for empowering the Biodiversity Management Committees and integrating the PBR data and concerns in the local

governance? These questions have to be answered also in the context of the 2030 Sustainable Development Agenda.

Kerala as a model for decentralized governance and development in the country had set the goal of sustainable development as early as 1990s. During the peoples' planning and decentralization, the core idea was to promote primary production systems and sustainable utilization of natural resources. Now Kerala is going through a critical development path, struggling to balance between the increasing individual needs of a developed population and arresting the depletion of natural resources.

The 2018 Big flood in the state aggravated the existing maladies, worsened the life struggles and vulnerabilities of the poor. One of the heavily affected districts of the state was Wayanad district- a critically important biodiversity terrain of Western Ghats. About 47 landslides, more than a thousand land slips and 234 land subsidence were reported. The impact assessment reports from the district revealed nearly 70% of the people and as much percentage of the production landscapes of this predominantly farm/plantation district have been directly affected. The heavy rainfall and the resultant flood, landslides and other calamities of severe magnitude had destroyed the ecological foundations of food and agriculture production of this district.

The Flood has created new kind of challenges in environment and development management. Climate change mitigation and disaster preparedness has become the two core urgent concerns in the development as it was over that natural disasters are uncertain and can create setbacks in social progress and long term impacts on economic development. Rebuilding process requires more extraction of natural resources and biodiversity in general. Reducing the direct pressures on biodiversity and promoting sustainable use should be the core of the future development plans. Also improving the ecosystem management and functions is vital. Functional and efficient ecosystems can only contribute to climate change mitigation and adaptation measures.

Vol.10 No.4 October - December 2018
&
Vol. 11 No.1 January - March 2019

Social Science in Perspective

Climate resilient agriculture production landscapes and ensuring sustainable income from food and agriculture production are two such challenges for the state to ensure an equitable development. Improving resilience of food production landscapes through ecological intensification and maintenance of biodiversity in production system backed by a sustainable consumption plan could be the future strategy for the state. The first step towards achieving these goals is to include biodiversity on the agenda of development policy, planning and investment process and involving all stakeholders in the decision making process. More importantly, enhancing the capacity of local self-governments in mainstreaming biodiversity is the key to achieve the targets. An Action Framework with six clearly defined and developed mechanisms needed to achieve these outcomes are given below (see table 1).

Table 1: Action Framework for mainstreaming biodiversity in local governance

Attribute	Approach mechanisms
Outcomes	Sustainable agriculture and food production, Fisheries, Forestry, & Tourism
Institutional Arrangements	NBA-SBB-BMC; SPB -BD mainstreaming M&E Group
Approach & Tools	Case studies; PBRs & BD Gramasabhas; BD based Enterprises Development
Capacity Building	Officials of the 4 sectors above; BMCs and community Leaders
Communications	Biodiversity Fair; BMC Websites; Social Media; Community Radio, people's biodiversity monitoring platforms.
Finance	Internal (Govt) Gene Fund, SDG Fund; External (donors-CSR) (5% of the plan fund of all LSGDs should be set apart for conservation, integration of biodiversity in all sectors of development)
Monitoring & Evaluation	SPB -SBB- BD mainstreaming M&E Group

MSSRF's efforts to mainstream biodiversity and to strengthen the management

MSSRF, which played a key role in drafting the National Biodiversity Act 2002 and Protection of Plant Varieties and Farmer Rights Act in 2004 has established a Community Agrobiodiversity Centre in 1997 in Wayanad district. The Centre is engaged in activities of agro-biodiversity management by strengthening the systems in place as part of the emerged legislations, and reviving and revisiting the policies in the framework of emerging global sustainability frameworks. Some of the key activities are described here.

Peoples' Biodiversity Registers

The Biological Diversity Act 2001 directs preparation of People's Biodiversity Register' at every Panchayath, which documents knowledge of people on the biological diversity present in the Panchayath. The responsibility of preparation of such registers lies with the Biodiversity Management Committee. It should be maintained as a base document of all future conservation activities. MSSRF has taken leadership in preparation of this kind of a knowledge register, even much before the Biodiversity Act came in place in Kottathara, Meppady and Pozhuthana Grama Panchayaths of Wayanad. Since the implementation of Biodiversity Act, MSSRF has played a major role in preparing People's Biodiversity Registers. In 2013, Wayanad district became the first district in the state to complete preparation of PBRs in all its Panchayaths. The Community Agro-biodiversity Centre is actively engaged in assisting the three tier system of biodiversity action plan -National Bio-diversity Authority, State Bio-diversity Board and Biodiversity Management Committees. Though the state biodiversity board and BMCs have been constituted, the know-how on the application of biodiversity act is far too away from what is anticipated. Efforts at Panchayath level to facilitate the BMCs to undertake any activities other than drafting PBRs were very minimum in the panchayaths. MSSRF focused on creating

Vol.10 No.4 October - December 2018
&
Vol. 11 No.1 January - March 2019

Social Science in Perspective

awareness for the BMC members on the Biodiversity & PPVFRA Acts and setting up of models at Panchayath level to facilitate conservation action under the leadership of BMCs.

Empowering the BMCs

During the years 2013-14, we conducted a study in 23 Panchayaths on the status of the implementation of Biodiversity Act in the district. The criteria's set for assessment are awareness level of BMC members, Panchayath members and people on the Biodiversity Act, and use of Peoples Biodiversity Registers (PBR). The results of the participatory assessment shown that majority of Panchayath presidents were unaware of their BMC Chairmanship and so was the case of BMC Members about their BMC membership. Though People Biodiversity Registers (PBR) was prepared in most of the Grama Panchayaths, most of the BMCs did not conduct any follow-up meetings after the preparation of PBR. The agro biodiversity component is reviewed as very meager in over 60% of the registers. So the decision was to expand the sensitization programmes on BD act and powers of BMC. In the year 2014 there was only one Panchayath in the district has planned and implemented any single activity under BMC. The study could also identify that there is no mechanism to coordinate the activities of BMCs at district level. The BMCs were not represented in any of the planning bodies at Panchayath or district level and no working group and funding support was allocated at Panchayath level. In nutshell, BMC existed as paper institutions.

This study report was discussed at state level and generated discussion on how to improve the situation on biodiversity governance. The next effort was to build awareness among BMCs on BD Act and to set up some models in selected Panchayaths to formulate biodiversity conservation projects for BMC. Series of trainings, interactions and dialogues resulted in the formulation of four projects in Wayanad: (i) A community Seed Bank for rice in Vellamunda Panchayath, (ii) Regeneratio

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

of riverine ecosystem in Pulpally Panchayath, (iii) Restoration of reverie vegetation and conservation of Heronry in Panamaram Panchayath and (iv) a land use study in Vythiri Panchayath for developing land use guidelines. BMCs of the respective Panchayath came forward by developing proposals and initiating activities at different levels.

Wayanad Community Seed Festival

Wayanad community seed festival was initiated by M.S. Swaminathan Research Foundation Seed Care and Wayanad District tribal Development Action Council (WTDC), the two Grass root institutions promoted by MSSRF in the year 2014. This 3-day event is an on going activity where a multi stakeholder participatory engagement ensured to democratize the ton-farm conservation. As part of building custodian farmer networks the details of farmers who are conserving native crop varieties in the district were documented.

Annual Seed festivals offer opportunity for the traditional farmers to organize, exhibit and exchange their seeds. The farmers are organized under the BMCs and represented respective Panchayaths in the fest.

Seed festivals attract people from different walks of life including children and it act as a knowledge sharing platform on agro-biodiversity. Many number of awareness classes being conducted as part of the seed festival as a trans-disciplinary engagement and to have common understanding on the issues related to agro-biodiversity conservation and utilization. The annual seminars at the Festival discuss the policy gaps in integrating the agro-biodiversity concerns in to local development agenda.

Panchayath level initiatives to conserve agro-biodiversity

Three Grama Panchayaths of the district initiated programmes to set up Community Seed Banks. Edavaka Panchayath has initiated and implementing gene bank programme for tuber crops conservation since 2014. Edavaka has widened their conservation efforts to rice seed bank, special financial support to all farmers who cultivate traditional

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

paddy varieties, Medicinal plants and trees in the farm land. Vellamunda panchayath has initiated rice Seed Bank, Vythiri Panchayath initiated conservation plots for pepper varieties. 8 Panchayaths submitted projects for conserving different crop varieties in last three years. Many of these projects get rejected in the processes of vetting or at the time of implementation due to conflicting clauses in the LSGD guidelines. It was also noticed that the officials at the vetting and implementation end are not sensitized enough on the changing developmental needs and concepts. Creating an economic benefit in conservation is the core issue in promoting sustainable use of biodiversity. The concept of "do ecology" which revolves around creating economic stake in conservation to serve simultaneously conservation as well as reduction of poverty becomes very relevant in this context. This is an opportunity for the state and panchayaths to create legally binding access to genetic resources for food, health and agriculture which can lead into development of "bio-enterprises" where benefits can be monetary with the knowledge providers.

This is critically important with respect to the conservation of medicinal plants that have use value amongst the tribe community of the district and for which market can stimulate their conservation and extensive cultivation. The CBD enabled Access & Benefit Sharing mechanism offers ways and means to help the individuals and communities to target community level market development for biodiversity.

Panchayath level Seed Festivals

By fourth year the BMC members of the Panchayaths who regularly attended the Community Seed Fest gradually started replicating the process at Panchayath level seed festivals. Such small localized seed festivals spread the message of conservation and use of agro-biodiversity to more number of people. BMC took major role in organizing such seed festivals and gradually identified their role in biodiversity governance.

Traditional Farmers' Directory

Wayanad community seed festival brought out a platform for many

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

farmers to interact each other and exchange knowledge and seeds from different locations. These interactions lead to the compilation of information about the traditional farmers of the district in the form of a directory. This was essential to create a network of farmers who conserve native varieties of crops and protect the seeds. The compilation helped in making a single point source on the details of conserved varieties as well as the farmers who can act as "conservation hubs" locally for protection of agro-biodiversity.

Recognition of custodian farmers and Community agro-biodiversity awards

MSSRF facilitated formation of a grass root organization among the custodian farmers of Malabar called 'Seed Care' in the year 2011. The objectives of this organization are to strengthen the conservation efforts of custodian farmers by building social networks, to work for protecting the farmer rights on the genetic resources they conserved, and to find markets for the value added native crop diversity and its products. They have initiated registration of 21 traditional rice varieties of Wayand as farmer's varieties under PPVFR Act 2001 in the year 2012.

Wayanad Tribal Development Action Council (WTDC) is another Grass root organization formed exclusively among Adivasi communities of Wayanad to address the special developmental needs based on community biodiversity management in the year 2006. WTDC is working with an objective of eradicating poverty and malnutrition among Adivasies of Wayanad, protection of community rights on biological resources and traditional knowledge on them and enhancing livelihood options of Adivasies. WTDC has got Genome Saviors' community Award from government of India under PPVFR Act in the year 2012. They received this award of ten lakh rupees in recognition of the rice conservation activities of MulluKuruma and Kurichya communities of Wayanad.

WTDC has institutionalized two annual Community Agro biodiversity Awards for on farm conservation efforts of Adivasi farmers of the district

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

utilizing the Genome Savior Award money. For the last five years WTDC is giving awards of Rs. 25,000 for the selected Adivasi farmer who conserve the most number of rice varieties in the district. Another Award of Rs.15000 for the contribution of agro-ecosystems conservation. These awards are distributed in the annual seed festival and given to the family including male, female and child members, in contrary to the conventional approach where often the male members are only recognized in public on behalf of the family.

Policy Advocacy

MSSRF submitted a set of policy recommendations regarding the agro-biodiversity management and BMCs after its five-year long interaction with BMCs and the Panchayath. The recommendations included year wise allocation of money for biodiversity management at Panchayath level, separate working groups for biodiversity, District level coordination of BMCs, representation of BMCs in District Planning Committee and appointment of an officer in charge at district level to coordinate and vet proposals from BMCs.

During the current year, the LSGD Department of Kerala has revised the SGD guidelines adding a new working group in Panchayaths to plan for biodiversity, environment and disaster management with 2% compulsory budget provision. This working group needs to be strengthened with inputs like basic data on biodiversity and natural resources of corresponding GP and the global situation in climate variations to plan future course of action. This is a welcome step and allocation of 2% fund for various activities under the working group can bring notable change at grassroots level for biodiversity conservation and climate change mitigation.

Promoting the Wayanad district as a carbon neutral district

In Wayanad, farmers practice mixed crop cultivation in dry land with many trees in the farm. Growing trees itself, is a conservation action

Vol.10 No.4 October - December 2018

&
Vol. 11 No.1 January - March 2019

Social Science in Perspective

in the context of climate change. However, farmers rarely benefit from this action till it's recognized by the state and value it for its contribution to combating climate change. Meenangadi Panchayath in Wayanad is piloting the carbon neutral project in the country through various efforts with the technical support of MSSRF.

Underpinning the gains in shade coffee production

Wayanad is the largest coffee growing area in the state. Almost 80% of the coffee production of the state comes from Wayanad. However, in recent times, the production has come down due to market fluctuations. Wayanad coffee plantations, are historically known for integration with abundant tree stocks and biodiversity; for example, some large farms have been identified with more than 40 different forest tree species, at least 8 rare and threatened frog species (Ground Frog (1sp) Bush Frog (5spp) and tree frog (2 spp) and over 100 bird species, more than in an equivalent area of farmland, and exceeded only by primary tropical forest. Recent research (Anil Kumar et al 2019, Karthika and Vishnudas, 2018) shows that Shade coffee gardens are almost equal to natural forest in case of certain faunal elements. This is a good evidence for marketing specialty coffee highlighting as grown in bio-diverse environment. Planting more trees in addition to existing trees will improve the carbon sequestration process combating global climate change. Coffee farms also check soil erosion and ensures nutrient cycling with deep-rooted trees in the farms ensuring sustainability. Shade grown coffee system amongst the small growers - marketing the coffee as a specialty product, carbon neutral and grown in bio-diverse environment, can improve the farm income and enhance the agro-ecosystem services. MSSRF advocates for shade coffee plantation as a climate resilient farming practice for Wayanad.

Conclusion

Kerala is going through the processes of rebuilding the state in the aftermath of the big flood. The UN report on this disaster and the

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

rebuilding plan highlights the need for rejuvenating natural systems and bringing the concept of sustainability in practice. A key question however emerges is "what are the evidences for those management practices, which poise protection and enhancement of human well-being, as well as production and production capability of biodiversity and ecosystem services for the new state? This question underpins sustainable development and it helped MSSRF to develop a conceptual model called 'C4 continuum' that pays concurrent attention to four fundamental purposes in the biodiversity sector, such as *Conservation, Cultivation, Consumption* and *Commerce* of genetic resources and ecosystem services management. This model produced several relevant and easily understandable indicators that are successfully used in measuring the biodiversity mainstreaming efforts in Wayanad district. The State Biodiversity Board in alliance with the National Biodiversity Authority, the Biodiversity Management Committees at the grass root level and the key stakeholder groups can take leadership to take this learning forward for the sustainable management of biodiversity sector of Kerala.

References

1. Nadesa Panicker Anil Kumar, Amsad Ibrahim Khan Saleem Khan and Vaniyan Balakrishnan 2019: Coffee, Climate and Biodiversity: Understanding the Carbon Stocks of the Shade Coffee Production System of India. In Handbook of Climate Change and Biodiversity, Climate Change Management, https://doi.org/10.1007/978-3-319-98681-4_7 © Springer Nature Switzerland AG 2019 W. Leal Filho et al. (eds.)
2. Nitiayog, India (2017): *Millennium Development Goals Final Country Report*, Government of India, http://www.mospi.gov.in/sites/default/files/publication_reports/MDG_Final_Country_report_of_India_27nov17.pdf
3. Nitiayog, India (2018): *SDG India Index, Baseline Report, 2018*. http://niti.gov.in/writereaddata/files/SDX_Index_India_21.12.2018.pdf

Vol.10 No.4 October - December 2018

&

Vol. 11 No.1 January - March 2019

Social Science in Perspective

4. UNDP (2018): Kerala Post Disaster Needs Assessment: Floods and Landslides August 2018. Executive Summary, UNDP. <https://www.undp.org/content/undp/en/home/librarypage/crisis-prevention-and-recovery/post-disaster-needs-assessment—kerala.html>
5. FAO (1999): Food insecurity: When people must live with hunger and fear starvation: The State of Food Insecurity in the world. 1999. <http://www.fao.org/NEWS/1999/img/SOFI99-E.PDF>
6. FAO (2009): The international treaty on plant genetic resources for food and agriculture. Conservation and sustainable use under the international treaty. <http://www.fao.org/3/a-i2579e.pdf>
7. Karthika C. & Vishnudas C. K. (2018): "A comparative study of mixed-species bird flocks in shaded coffee plantation and natural forest in Wayanad, Kerala", *Indian BIRDS*. 14 (4): 97–102.
8. United Nations (2015): Transforming our world: The 2030 agenda for sustainable Development, A/RES/70/1, United Nations, <https://sustainabledevelopment.un.org/post2015/transformingourworld>
9. NBA, (2009): National Biodiversity Action Plan. <http://envfor.nic.in/division/national-biodiversity-action-plan-nbap>

Footnotes

1. Transforming our world: the 2030 agenda for sustainable Development, A/RES/70/1, United Nations, www.sustainabledevelopment.un.org)
2. <http://envfor.nic.in/division/national-biodiversity-action-plan-nbap>