

## **Ecosystem Preservation and Local Governance: The Critical Role of Gram Sabha and Panchayat in Rural Sustainability**

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### **ABSTRACT**

*Well-functioning local governance structures have increasingly been recognized to be critically important for gaining environmental outcomes. Local institutions also play an important role in reducing poverty and inequality. Gram Sabha within Panchayati Raj institutions is one such local governance structure in India. The present communication deals with the comprehensive studies on the impact of Gram Sabha to amplify sustainable practices in ecosystem management. Climate change related issues are among the most significant and destructive existing challenges. Nowadays Panchayats assist significantly by offering support and direction to people to combat with.*

**Keywords:** Gram Sabha, West Bengal, Ecosystem, Sustainable development, Rural Governance, Conservation

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### **INTRODUCTION**

Emerging awareness believes that local governance should be the basis of ecosystem management. In order to manage the ecosystem, the local population has to participate (Das et al., 2022). As an approach to "good governance," the decentralization of power is being widely emphasized. Decentralization means the devolution of functions and the transfer of resources and authority of decision-making to local institutions. The 'Gram Sabha' is generally a village assembly, which is a democratic and constitutional body consisting of either all adult residents of the village or all those born and living in a village as citizens for a minimum of not less than six months (Mandal, 2011). Though the term 'Gram Sabha' has not been defined in the Indian Constitution, the conceptual framework can be derived from various articles of the Constitution of India. The 'Panchayat or other elected body' are representatives of the 'Gram Sabha' and generally report to it. Basically, 'Gram Sabha' refers to a rural meeting for collective decision-making on the part of local inhabitants. In India, different systems from the bottom to the top of self-governance have been developing. In many states, the Panchayati Raj system, with three levels of the Panchayat, has been constituted. The 'Gram Sabha' is generally a village assembly, which is a democratic and constitutional body consisting of either all adult residents of the village or all those born and living in a village as citizens for a minimum of not less than six months (Mandal, 2011; Jain, 2017). In the state of West Bengal, since the late 1970s, the Panchayat at the village level has been functioning under the name of Gram Panchayat (Jabeen, 2017). The Gram Panchayat functions under the 73rd Constitutional Amendment Act of 1992, as a body of self-governance. In the new phase of Panchayat, the system is more effective in functioning because of the monthly meetings of villagers at the village level, which are named Gram Sabha (Ghatak and Ghatak, 2002). Panchayats are assigned with tasks such as the organization of water supply, maintenance of roadways and avenues, and road illumination, among others (Parashar et al., 2019). Panchayats are crucial in the provision of ecosystem management, sustainable development, biodiversity conservation, public health services and the enhancement of health determinants such as access to safe water and adequate sanitation facilities (Roy, 2018; Gadgil, 2007). Community participation is thought to be related to the sustainability of a community-based resource management system (Chattopadhyay et al., 2010). The local institutions play a critical role in working on the ground level with real-time interaction.

It is the smallest unit of life in India. Thus, the structure of the 'Gram Sabha' is basically an organ of democracy that provides the eligible citizens of the village an opportunity to participate in local self-governance (Nial, 2019). The Gram Sabha and Panchayats aim to take full responsibility for the design and execution of programs related to socio-economic development and social justice. It has a great role as representative bodies and focal points for strengthening the spirit of democracy and socialist values. It acts as a platform for bringing people together for discussion and collective action in the wider local development process. The structure of the 'Gram Sabha' reflects the process of society in rural culture, as they both form a community (Mohanty, 2010). The democratic activities carried out by the 'Gram Sabha' are built on the ideas of justice and their relationship with the environment. Community organizations and local elected bodies are guided by the considerations of social justice and environmental stewardship.

### **Importance of Ecosystem Management**

Ecosystems are impacted by global change, major catastrophes occur with regularity, greenhouse gas concentrations are rising, biodiversity is diminishing, and issues such as water pollution and photochemical air pollution, along with other ecological and environmental challenges, are prevalent (Sarkar et al., 2018; Vaishnavi, 2018; Murali et al., 2022; Murali et al., 2022). These are the basis of subsistence for millions, notably in the land of India. They offer immense commercial ventures as well as prospects in rural areas. Biodiversity is the prime concern in ecosystem management. It has social, ecological, and economic aspects. Biologically diverse ecosystems provide the basic capability to tackle the disturbances prevailing to some extent in every ecological character of West Bengal (Sarkar and Padaria, 2010). Only the rich ecosystems have the potential to overcome the ecological disturbances favouring the economy of the local to global diversity of India. The necessity for ecosystem and ecological balance must be maintained for the existence of healthy flora and fauna, along with cattle wealth and people, through which natural resources are to be conserved (Sarkar and Mazumder, 2016; Sarkar et al., 2017; Verma, 2018). The need for ecosystem management in many states of India lies in the essence of the statement that the conservation of biological diversity is good, and in some cases essential for development; but the neglect of ecosystem health is a fine way to economic problems. Ecosystem management deals with the different strategies of the process, such as problem analysis, objective setting, policy formulation, and so on in the needy habitats (Nyika, 2021). Ecosystem management aims at rendering the most valuable economic services through the incorporation of parallel vested objectives within a sustainable development framework. Ecosystem management calls for an integrated strategy across the biophysical and social sciences. Avoidance of risk and managing the risk is the main principle in ecosystem management and involves continually improving through management plans or action plans, not limited to monitoring aimed at evaluating the effectiveness of the policies (Van Dyke and Lamb, 2020). Risk assessment is the crux of ecosystem management, which identifies the concerns, and the management is to be done by adopting adaptive, precautionary, or active intervention measures. Ecosystem management contributes to the attainment of sustainable development goals. It is linked with the effective and participatory process in the use of resources, sustainable management, conservation, and restoration in an economically viable and ecologically balanced process.

### **Role of Gram Sabha in Ecosystem Management**

Gram Sabha at the village level, after the passage of the 73rd amendment, has been vested with diverse functions, including preparation of local plans and maintenance of the village environment. Over the years, different committees have conducted case studies to explore and understand the roles and impact of Gram Sabha in efficient ecosystem management. Several studies try to add footnotes to the role of Gram Sabha. Gram Sabha involves in several dimension of ecosystem management: pro-environment policy-making, pro-environment resource allocation, community involvement in their own affairs, promoting democratic ethos, conflict resolution, and procedural justice.

#### **1. Biodiversity Conservation**

India displays a wide range of agro-environmental situations and biodiversity. There is a wealth of floristic composition and fauna in this state that directly or indirectly contribute to human needs for survival, physical, and social well-being (Bhattacharyya, 1997; Chakraverty et al., 1999; Dey and Sarkar, 2021; Sarkar and Mazumder, 2022). There is an evident shift from a natural capital-based production-consumption cycle to a human-manufactured capital-based production. The ecosystem products satisfy considerable portions of rural human needs (Sahoo et al., 2021). These include a nutritious diet, agricultural inputs used as traditional medicines, fodder and fiber for the animals as food, and cash crops for the human populations, as well as shelter and fuelwood. This ecosystem of rural villages maintains excellent relationships among natural phenomena, resources, social systems, socio-culture, and socio-religion, and develops unique traditional indigenous technology for the sustainable use of these resources (Ray et al., 2013; Mazumder and Sarkar 2019; Das et al., 2022; Jaman et al., 2022).

Local governance is a successful tool for promoting collective action in the management of ecosystems to foster biodiversity conservation. The Gram Sabha in the several parts of the Indian subcontinent appears to be effective in that domain (Dayal and Sharma, 2024). Among its many human and physical incomparable assets, West Bengal has immense biodiversity resources, which consist of animal, plant, and marine life in various ecosystems in land, water, and forest. Moreover, besides having one of the most strategic locations in the world along the eastern coast of the Bay of Bengal, bridging the vast hinterland of Bangladesh, Bhutan, and Nepal with the neighbouring countries of India, the state possesses a number of national treasures, some of which are famous world heritage sites (Bhuin, 2014). Collaboration among the Social Forestry Division, Sundarbans Biosphere Reserve, Forest Department, NGOs, and local people has established a barrier to the further extinction of the tiger in the Sundarbans (Chandra and Mukhopadhyay, 2022). This habitat has been very effective in offering safety and jungle products to the livestock keepers. However, many of these activities are not planned to augment the wildlife that performs an economic and social role. Normally, biodiversity inhibits the development of such activities. However, biodiversity reports are to be presented from time to time to showcase the strategies to be followed for increasing local economies and creating job opportunities by using the Gram Sabha and citizen researchers.

## **2. Water Resource Management**

Two major problems that have affected many Gram Panchayats. These problems are different depending on things like population, location of the Gram Panchayat or different settlements within the Gram Panchayat, season, monsoons, and so on. Due to rampant use in agriculture, human consumption, rapid urbanization, industrialization, and deforestation, water scarcity is now being experienced throughout India (Bera et al., 2021). Pollution of ground and surface water bodies is increasing day by day. Contamination of rivers, lakes, and the sea also poses a risk to human health. The state program for rainwater collection, aimed at establishing a replicable framework to address ecological imbalance, known as the “Jal Dharo Jal Bharo” project, was started in 2012 (Bhuin, 2014). The Gram Sabha has started working together for the integrated management of water resources found locally in this ecology under water scarcity and pollution challenges. This study will reveal the work done by the Gram Sabha in this area in micro-level analysis. Water is the main driver of life support systems in this ecology. According to the Gram Sabha, everyone knows that water can be sustainably used by applying traditional knowledge. This indigenous knowledge is very valuable for sustaining long-term use. Fountains, waterfalls, natural canals or river paths, different types of plants found in ponds and rivers, bridges, dams, and water paths from field to field, lakes, vegetable gardens, etc., help in understanding the ancient knowledge of water. Such things have a unique way of functioning, a suitable area of function, and the correct amount of practice. In order to protect these resources, everyone knows that the involvement of the government alone is not enough, and it is also not the right principle of self-sustaining diversity. Therefore, to deal with water pollution in the water bodies, collective efforts of the local population are most helpful for preventing contamination of water by anyone. The ultimate aim of the water conservation movement is to create mass awareness in society by involving the community in solving the existing water problems in the local waters of the ecology related to the Gram Sabha.

Apart from the active physical participation of the community involved with the physical improvement of water bodies, some initiatives have been taken purely to address the rational issues of the matter. For example, different types of seminars, discussions, street dramas, exhibitions, poster designs, and distribution have also been organized various times to raise the awareness of the community and the people as a whole. Water User Associations, Block Level Associations, and District Level Associations, developed in the water management community, have also worked together for all Ums under participatory irrigation management. During the planning process of the guidelines, there needs to be active participation of the local community at all levels, but without the involvement of the higher-level government in the process, this planning cannot be developed due to the official requirement. The administrator advisor has top-down power control over the concerned government department. The power control chain has also been kept down to the entrepreneurial decision-making process from the Centre State Department to the district block and GP level in all levels of the approach. Under the guidelines of sector-specific rules and regulations, various constraints have been stipulated under physical and technical aspects, as well as the collective involvement of the ecosystem, taking care of the potential effects on life-supporting resources through regulatory and participative decision-making processes.

## **3. Waste Management**

Health, hygiene, and sanitation serve as indices of socio-economic progress within a society. The successful execution of the program would result in enhanced human development indicators for the nation (Dutta et al., 2020). These local bodies can also play a part in the prevention and control of

pollution in their respective areas (Vaisnabi, 2018). Constituted under the PESA Act, the Gram Sabha is given the liberty to make plans to specifically look into the welfare and development of the village (Dhavaleshwar, 2024). They form committees to carry out specific tasks. Traditionally, villagers used to dispose of their waste by feeding livestock or using rotten waste in the fields. Hence, there was a system of waste management, but with changing practices and new technologies, it has become difficult to dispose of waste. Municipal waste is generally disposed of in municipal or town localities. However, the rural area is free from this. It finds its way from high-rise to low-rise areas because the entire waste that is produced gets dumped in the urban area. To keep the rural area safe, a proper waste management plan needs to be executed that is ecologically sound. The reason behind the failure of many waste collection and disposal efforts is resource management, as not all villagers are lucky enough to gain awareness of various issues. The Gram Sabha also deliberates on hospitals and veterinary facilities along with their operations. They inform individuals about the measures necessary to safeguard the health and cleanliness of both humans and livestock. The Health Officer of the primary health center of the Panchayat would attend the Gram Sabha to inform the assembly on inoculation programs, malnourished children, and preventive measures against diseases such as malaria, dengue etc. The Gramsabha deliberates on the services and amenities to be offered by the health centers (Dhavaleshwar, 2024).

One of the ways to build awareness linked to waste is by integrating the ecological aspects of traditional practices and their link to modern approaches. Hence, propagating through video, skit, street play, and campaigns regarding waste should ensure that individuals are made aware of the harm caused by waste. Integrating natural composting, making manure from kitchen and garden waste at regular intervals, and encouraging composting are some of the initiatives that can be implemented. Segregation at source is the most effective technique to reduce waste and facilitate easy recycling. This could be publicized through wall paintings all over the village. Municipal waste management is one of the major functions of crucial importance; if the waste management system is not as per the requirement, the village people are always open to many hygienic diseases. Solid waste needs attention and concern from every individual. Earmarking a place for a dumping yard is a stable concern as it keeps our village clean. Collection of residual waste can be done by our village administrative body by having a contract. However, there is a problem of littering and scattering while doing so. Once the motivation of the village administrative body wanes, this will disappear because of the failure to ensure proper sanitation in the village. In conclusion, waste management is a matter of concern for everyone; any information helps a great deal in knowing what to do in our village.

#### **4. Sustainable Agriculture:**

Agriculture in India is predominantly reliant on marginal farmers, who possess around 2 to 5 acres of land. Agriculture is also a matter addressed by Panchayats, may be enhanced by the implementation of specific regulations in the cultivation of indigenous crops. These farmers have faced a dire position for several years due to rising production expenses, environmentally harmful farming techniques, and diminishing government support (Parashar et al., 2019). Gram Sabha may implement several policy regarding sustainable agriculture.

#### **5. Challenges**

In most cases, the major barrier was the inadequacy of retained resources to perform management activities efficiently. Usually, traditional knowledge for conservation was not ideographic. As a result, there was a general lack of concern for the conservation of public property on the part of local user groups. The decision-making body may be ignorant about the impact of their decisions on natural resources. They may not establish any relief measures for the distressed land users. Parties external to the local groups may not agree. Inadequate manpower or funds for the implementation of management activities are also a hindrance to the full implementation of restoration programs. The low level of resource knowledge, lack of education, and lack of training were identified as key constraints to environmental management in most case studies.

#### **6. Community Participation and Decision Making**

Involvement of the local communities in decision-making processes related to ecosystem management is essential. If people's views are incorporated in different policies, the decision becomes more robust and environmentally friendly. Therefore, the demand for the participation of the local community has been growing continuously. However, if people are to participate effectively, they need to be involved through different methodologies such as stakeholder meetings, public hearings, workshops, training, seminars, study tours, brainstorming sessions, visits, and access to relevant information. These need to be discharged transparently through local governance machinery at all levels. One of the important features of this approach is to have the choice for our local innovative initiatives as per our indigenous domain knowledge.

Grassroots democracy has manifested itself most extensively in debates about the environment and the role everyone can play in making decisions about environmental management at a variety of levels. Wildlife habitats, agro-biodiversity, and local indigenous knowledge are neither gender- nor trade-neutral. Only the most vulnerable, poor, and marginalized best appreciate the interaction, relationship, and survival potential of the environment. It is therefore important that all levels of women's groups, community organizations, cooperatives, and trade associations contribute to the development of policies. One of the obstacles to full participation in decision-making about the environment is economic: the cost, in time and money, of taking part. Those who are disadvantaged economically are similarly disadvantaged in participating in strategic environmental decisions. Socio-economic policies and education are essential tools for the removal of these barriers to participating in the Gram Sabha for key management decisions affecting the environment. It is important for the state.

Gram Panchayat is required to conduct a special meeting of the Gram Sabha at least twice a year at places and functions under the Panchayat. For this purpose, the Gram Panchayat or the Panchayat Samiti will prepare a draft program regarding the place and time for such a special meeting. The special meeting will discuss the said delivery, which will be published in a local newspaper. This will be followed by the special meeting, on the date and at the place so specified, to discuss the draft program. This meeting will approve the draft program with such modifications as the Gram Sabha members may think fit to make. This is a very good platform for strengthening conservation activities if it is organized and implemented in a proper way.

### **7. Capacity Building and Training Programs**

In order for Gram Sabhas to be effective in their ecosystem management roles, capacity building and training programs need to be developed, ideally in partnership with local institutions and within the groupings of local institutions that work in the domain of resource governance and community development. The programs should address two major areas: training on understanding the resources and how to manage them, and training on governance practices and enhancing community engagement. In this manner, the program is directed at addressing domain-specific knowledge and values as well as domain-specific skills. The intention of such models is to increase the skills and knowledge of Gram Sabha members so that the nature and possible outcomes of their decisions are not only understood but also assisted by sensitivity to a range of preventive and corrective procedures. The major benefit of such training and accompaniment is the increased capacity and ability of community organizations to make more informed and proactive decisions concerning their resources.

### **8. Impact Assessment and Monitoring**

Impact assessment will be important in assessing the success of Gram Sabha's engagement in ecosystem management. Methodologies in this may include the assessment of both environmental outcomes that are targeted by community conservation activities, and plans and other indications of community engagement with the task of ecosystem management. Triangulation of methodologies is useful in this context, as this provides some check on the two different aspects of the complex interventions on which the assessment will focus. Many of people find it useful to distinguish between two main levels of information - that which is primarily of interest to the community organizations - monitoring gains or losses as compared to a set of conditions of primary interest. For such patterns which are of particular interest to the community, there is a need for baseline data, the collection of which may have to come before the start of the initiative. However, there is also usually ongoing monitoring of a complementary set of indicators that helps in understanding the ecosystem and gather knowledge.

Impact assessments will also help to inform a feedback loop built into policies by Gram Sabha for adaptive management. That is, we need to build in opportunities to learn from the outcomes of Gram Sabha efforts, in order to steer and revise the activities. Decision-making in such a policy will need to be guided by its own assessment, which is interested in examining primarily reflecting the perspectives of the communities who are organizing themselves this way. The main obstacle to more thorough assessments is one of funding and, especially, expertise. In the Indian context, it looks as if very little aid currently targets such inward-focused policy evaluation, but this could and should change soon. Support is likely to be required to take this next step. Escaping from our initial assumptions, we can get information to other projects and national or international policymakers to improve this project and learn as much or more about the world we are trying to help as we would if we simply asked the important questions with the communities in the first place. Extensive evaluations such as those described will be impossible without improved methodologies of impact assessment, working to raise the capacity of both communities and those advising and monitoring them to conduct useful evaluations. Nevertheless, it has been shown that it is possible to make associations between the ways involved and activities accommodate the incompatibilities between heightening the importance of target to performance. It is possible to surface

preliminary questions for encouraging internal assessment and policy mechanisms. It will be well worth the efforts to energize such a turn to organizational learning.

## 9. Conclusion and Recommendations

Local governance is essential to encourage local community care for the environment and enhancement of sustainable development (Datta, 2003). The District and State Action Plans recognize that improvements are needed at the village level too. This article offers a fairly broad-brush approach with regard to recommendations.

1. It suggests developing a pilot situation in each of the available types of forest.
2. In the pilot areas, the refreshment course should focus on the means of obtaining the disposition of the user group that will make them keen to implement a plan. Training should be more structured to allow for better absorption and ensure that those attending the workshops are those with day-to-day responsibility for the forest.
3. The Government of West Bengal, in conjunction with the Forest Department, needs to commit to the importance of government and the Forest Department at the local level. This should be through the political tier, just like the Sarpanch is the legal voice in taking local decisions for his/her Panchayat. However, the local politicians would need some orientation to enable them to understand the Forest Department's relationship with panchayats, particularly those in the areas of joint forest management of such tools as the Gram Sabha.

## REFERENCES

1. Bera, A., Das, S. (2021). Water Resource Management in Semi-arid Purulia District of West Bengal, in the Context of Sustainable Development Goals. In: Shit, P.K., Bhunia, G.S., Adhikary, P.P., Dash, C.J. (eds) *Groundwater and Society*. Springer, Cham. [https://doi.org/10.1007/978-3-030-64136-8\\_23](https://doi.org/10.1007/978-3-030-64136-8_23)
2. Bhattacharyya, U.C. (1997). Introduction. In: *Flora of West Bengal*. Vol. 1. Botanical Survey of India, Calcutta. 1–7.
3. Bhuin, P.K. (2014). Sustainable Water Resource Management in West Bengal: A Review. *Bhatter College Journal of Multidisciplinary Studies*. IV: 94-104.
4. Chakraverty, R.K., Srivastava, R.C., Mitra, S., Bandyopadhyay, S. & Bandyopadhyay, S. (1999).
5. West Bengal. In: Mudgal, V. & Hajra, P.K. (eds.), *Floristic Diversity and Conservation Strategies*
6. in India. Vol. 3. Botanical Survey of India, Calcutta. pp. 1517–1630.
7. Chandra, S., Mukhopadhyay, M. (2022). Social Involvement in Joint Forest Management Programme in Fringe Villages of the Sundarban Biosphere Reserve Area, West Bengal, India. In: Hassan, M.I., Sen Roy, S., Chatterjee, U., Chakraborty, S., Singh, U. (eds) *Social Morphology, Human Welfare, and Sustainability*. Springer, Cham. [https://doi.org/10.1007/978-3-030-96760-4\\_22](https://doi.org/10.1007/978-3-030-96760-4_22)
8. Chattopadhyay, R., Chakrabarti, B., & Nath, S. (2010). Village forums or development councils:
9. people's participation in decision-making in rural West Bengal, India. *Commonwealth Journal of Local Governance* (Special Issue), 66-85.
10. Das, B., Mazumdar, M., Dey, M., and Sarkar A.K. (2018) Weed Composition in Rice Field Agroecosystem of Terai-Dooars and Northern Plain of West Bengal, India. *Int J Recent Sci Res*. 9(6), pp. 27375-27381. DOI: <http://dx.doi.org/10.24327/ijrsr.2018.0906.2245>
11. Das, B., Mandal, S., Sarkar, K., Mazumdar, I., Kundu, S., Sarkar, A.K. (2022). Contribution of Ethnic and Indigenous people in the Conservation of Plant Biodiversity in India. *Adv. Biores.*13(3):209-229.
12. Dayal, S. S., & Sharma, D. (2024). Jharkhand Tribal Gram Sabha: Forest Governance dynamics under FRA 2006. *ShodhKosh: Journal of Visual and Performing Arts*. 5(6): 3039–3047. <https://doi.org/10.29121/shodhkosh.v5.i6.2024.3568>
13. Dutta, L. (2020) Role of Gram Panchayat and Village water and sanitation committee for the success of Swachh Bharat Mission (Gramin). *International Journal of Creative Research Thoughts*. 8(9): 3667-3671.
14. Gadgil, M. (2007). Empowering Gramsabhas to Manage Biodiversity: The Science Agenda. *Economic and Political Weekly*. 42(22):2067-2071. 10.2307/4419660
15. Dey, M. and Sarkar, A.K. (2021) Plant assemblages within and adjacent to Protected areas of Adina Deer Park (Forest), Malda, West Bengal, India. *Bull. Env. Pharmacol. Life Sci.*10(12):162-187.
16. Dhavaleshwar C.U. (2024). Peoples participation in Gram Sabha and Rural development. *International Journal of Research in Commerce and Management*. 5(1): 44-46.
17. Ghatak, M., & Ghatak, M. (2002). Recent Reforms in the Panchayat System in West Bengal: Towards Greater Participatory Governance? *Economic and Political Weekly*, 37 (1): 45-58.
18. Jabeen, R. (2017) History of Panchayati Raj Institutions in West Bengal and Participation of Women. *Bhatter College Journal of Multidisciplinary Studies*. VII (1):1-9. 10.25274/bcjms.v7n1.sc-en-v7-01-01
19. Jaman, A., Mazumdar, I. and Sarkar, A. K. (2022), Innovation and Sustainability through Urban Agroforestry and House yard Garden. *Int. J. Agriworld*, 3 (1): 1-11.
20. Kumar, S., and Sharma (2019). Enhancing People's Participation in Gram Panchayats: Challenges and Strategies. *International Journal of Local Governance and Policy Studies*, 7(2), 112-128.
21. Mandal, A. (2011) Gram Sabha-A conceptual exploration. *Indian Journal of Public Administration*. LVII (2):209-222.

22. Mazumder, M. and Sarkar A.K. (2019). Ethnobotanical survey of indigenous leafy vegetables consumed in rural areas of Terai-Dooars region of West Bengal, India. *Journal of Threatened Taxa* 11(12): 14612–14618. <https://doi.org/10.11609/jott.5039.11.12.14612-14618>
23. Mazumder, M. and Sarkar A.K. (2022). Ecological status of angiospermic Macrophytes in Retention ponds and drainage ditches of Jalpaiguri district, West Bengal, India. *Indian Forester*. 146(3):226-234.
24. Mohanty, B. (2010). Grama Sabha Scenario in Orissa and West Bengal. *Orissa Review*. February – March. 13-16.
25. Murali, R., Bijoor, A., Thinley, T., Gurmet, K., Chunit, K., Tobge, R., ... Mishra, C. (2022). Indigenous governance structures for maintaining an ecosystem service in an agro-pastoral community in the Indian Trans Himalaya. *Ecosystems and People*, 18(1), 303–314. <https://doi.org/10.1080/26395916.2022.2067241>
26. Nataraju, G., and Khandimath, M. (2018) Grama Sabha - A Milestone for sustainable development in rural areas. *SELP Journal of Social Science*. IX(37):71-74.
27. Nial, S. (2019) Transforming India through Panchayati Raj Institutions. *IOSR Journal Of Humanities And Social Science*.24(4):1-5.
28. Nyika, J. M. (2021). Sustainable Ecosystem Management: Challenges and Solutions. In A. Karmaoui, K. Barrick, M. Reed, & M. Baig (Eds.), *Impacts of Climate Change on Agriculture and Aquaculture* (pp. 118-139). IGI Global Scientific Publishing. <https://doi.org/10.4018/978-1-7998-3343-7.ch006>
29. Parashar, V.C.S., Saxena, S., Meenakshi (2019) Local Government Institutions and Environment Management in South Asia: A Case Study of India and Bhutan. *International Journal of Innovative Technology and Exploring Engineering*. 8(7C2):168-173.
30. Prasad, S. and Sole, N.A. (2019) Pathalgadi: A Critical way to Empower the Gram Sabha. *Shodh Sanchar Bulletin*. 9(36):130-134.
31. Ray, S., Roy, R., and Mondal, A.K. (2013) Biodiversity, Resource utilization by the local villagers of south West Bengal, India. *Int. J. Life Sc. Bt & Pharm. Res.* 2(1):296-305.
32. Roy, T.K. (2018). Panchayati Raj the Rural Local Governance in West Bengal: An Overview. *Research Review*. 03(08): 1239-1243.
33. Sahoo, G., Wani A.M., Dash A.C., et al. (2021). Impact of rural activities on biodiversity and ecosystem services. *Journal of Tianjin University Science and Technology*. 54(7):373-393.
34. Sarkar, A.K. and Mazumder, M. (2016) A Surveillance to Evaluate the Diversity, Dominance and Community Structure of Tree Species in Nagrakata Forest Beat, Chalsa Forest Range, West Bengal, India, *Int. J. Pure App. Biosci.* 4(5): 133-143. <http://dx.doi.org/10.18782/2320-7051.2395>
35. Sarkar, A.K., Dey, M., Mazumder, M. (2017). A Comparative Study of Tree Species Composition of Panjhora Forest Beat and Sipchu Forest Beat of Chalsa Forest Range, West Bengal, India. *J App Biol Biotech*. 5(02): 045-052. DOI: 10.7324/JABB.2017.50207
36. Sarkar, A.K., Dey, M. and Mazumder, M. (2018) Impact of non-timber forest products on Forest and in Livelihood Economy of the People of Adjoining Areas of Jalpaiguri Forest Division, West Bengal, India. *Int. J. of Life Sciences*. 6 (2):365-385.
37. Sarkar, S., and Padaria, R.N. (2010) Farmers' Awareness and Risk Perception about Climate Change in Coastal Ecosystem of West Bengal. *Indian Res. J. Ext. Edu.* 10 (2):32-38.
38. Tang, J., Xiong, K., Chen, Y., Wang, Q., Ying, B., & Zhou, J. (2022). A Review of Village Ecosystem Vulnerability and Resilience: Implications for the Rocky Desertification Control. *International journal of environmental research and public health*, 19(11), 6664. <https://doi.org/10.3390/ijerph19116664>
39. Vaishnavi, A. (2018) Role of Local Self Government in the protection of Environment. *International Journal of Pure and Applied Mathematics*. 120(5):2209-2222.
40. Van Dyke, F. and Lamb, R.L. (2020). *Conservation Through Ecosystem Management*. In: *Conservation Biology*. Springer, Cham. [https://doi.org/10.1007/978-3-030-39534-6\\_9](https://doi.org/10.1007/978-3-030-39534-6_9)
41. Verma, A.K. (2018). Ecological Balance: An indispensable need for human survival. *J. Exp. Zool. India*. 21(1): 407-409.
42. Webster, N. (1992). Panchayati Raj in West Bengal: Popular Participation for the People or the Party? *Development and Change*. 23(4): 129-163. <https://doi.org/10.1111/j.1467-7660.1992.tb00472.x>

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