



Regenerating Natural Capital

A Workshop on Jal, Jangal and Jameen



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INSTITUTE FOR CONTEMPORARY STUDIES

Author:

Jeet Singh, Associate Fellow - Environment, Natural Resources and Sustainability, RGICS

Review and Editing:

Vijay Mahajan, Director, RGICS, New Delhi

Valuable input from:

Ms. Urmila Shukla, IAS, Director, Water and Land Management Institute (WALMI), Bhopal

Dr. Vishal Massey, COO, Club of Rome-India, Delhi

Dr. Vivek Bhatt, Associate Professor, Water and Land Management Institute (WALMI), Bhopal

Prof. Somnath Ghosh, Senior Visiting Fellow, RGICS, New Delhi

Mr. Dinabandhu Karmakar, Mr. R. Seenivasan and Mr. Pratyaya Jagannath from KABIL, New Delhi

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1. Background



Madhya Pradesh is the second largest state after Rajasthan covering nearly 9.5% (3.08 lakh sq. km.) of total geographical area of the country and inhabits 6% (72 million) of the total population. This central state of India has huge social, ecological, climatic, geographical and demographic diversities. It is part of peninsular plateau of India separated by Ganga-Yamuna plains in the north, Aravali in the west, Chhattisgarh in the east and Tapti valley and the plateau of Maharashtra in the south¹. The highly diverse ecosystems of the state include plateaus, ravines, ridges, valley, riparian area and flat plains².

More than 31% of the total geographical area of the state is categorized as forest. The state has 9 National Parks and 25 Wildlife Sanctuaries. However, the continuous degradation of natural resources especially Water, Forest and Land has adversely affected life and livelihood of local people. A large part of the state is facing water crisis on the one hand and degradation of soil on the other hand. It comes along with looming threat of desertification. The forest resources has seen continuous decline in canopy density over last few decades.

1 <http://www.mp.gov.in/web/guest/state-profile>

2 <http://mpenvis.nic.in/index1.aspx?lid=269&cmid=1&clangid=1&linkid=209>

The Rajiv Gandhi Institute for Contemporary Studies (RGICS) and Indian National Association of the Club of Rome (CoR) conducted a workshop – ‘Regeneration of Natural Capital: Land, Water and Forest’ in collaboration with Water and Land Management Institute (WALMI) in Bhopal. The workshop organized on 27 and 28 August 2019 attempted to reflect on issues related to the degradation of Land, Water and Forest. The workshop also tried to come up with policy recommendations for the regeneration of natural resources in Madhya Pradesh.

Three cabinet ministers of the state government appeared in the inaugural session on 27th August 2019 and expressed their openness to consider policy suggestion as outcome of the workshop. Mr. Jaywardhan Singh, minister in-charge of Urban Development in his speech listed number of initiatives taken up by his department to ensure portable drinking water for all in cities. He said that while the government is committed to ensure right to water for all, it is also serious about fixing accountability of stakeholders for water conservation, keeping water pollution free and effective water distribution. Initiatives include rejuvenation of traditional water sources in cities, water auditing, considering introducing slab based water charges through meters and enforcement of laws related to pollution.



Addressing the gathering Mr. P.C. Sharma, cabinet minister in-charge of public relations said that the state government is committed to address water crisis by allocating adequate financial resources. He said that that government has decided to invest Rs. 1,000 crore to realize right to water for all in the state. He also stressed on the fact that conservation of forest is essential to ensure regeneration of all natural capital. He said that the tribes have been protecting forest and therefore it is moral duty of the government to protect tribes in the state.

Mr. Kamleshwar Patel, cabinet minister in-charge of Rural Development and Panchayati Raj said that it is mismanagement, which degraded natural resources. Therefore, for the regeneration of natural resources, we need better management. Speaking about his government’s initiatives, he said that the government is committed to rejuvenate 32 rivers, which includes regeneration of natural resources in the entire catchment area. He

acknowledged that this is a mammoth task and therefore involvement of each Panchayat is crucial. He therefore, said that the government would do panchayat level planning. He concluded his speech by inviting workable solutions from the workshop to strengthen government's effort of regenerating natural resources. The integration of three resources (land, water and forest) came out most vividly in the speeches of three ministers of GoMP who referred to how the work of the departments under their individual charges dovetailed for the general development of the state with special focus on delivery for the marginalized sections of the society.

Apart from inaugural speeches by three cabinet ministers, the workshop entailed technical sessions, group discussion and panel discussions. On the first day, director of WALMI, Ms. Urmila Shukla (IAS) introduced the workshop and its purpose. Technical sessions in the workshop includes 'Urban Water Resources: Challenges And Solution' by Dr. Ashok Khosla, 'Rural Water Resources: Challenges And Solution' by Mr. Vijay Mahajan and 'Macro-Economics of the Central India' by Mr. Kirit Parikh. Additionally Mr. N.K. Parmar, Secretary, Mining Department in Madhya Pradesh, Lt. Gen Arun Kumar Sahni, Lt. Gen. Balbir Singh Sandhu and Mr. Abhilash Khandelkar addressed the gathering on various issues related to regeneration of land, water and forest.



Lt. General Balbir Singh Sandhu informed the gathering that the army, apart from protecting the country both in times of war and peace, was deeply involved in planting trees, to the extent that the largest military cantonment which was virtually barren earlier has the most green cover. This was achieved by engaging its soldiers and officers for this purpose almost “on a war footing”. Similarly Ms. Urmila Shukla, Director, WALMI informed how they regenerated natural capital in their own campus in Bhopal. She further said that the WALMI has decided to collaborate with other organization in the country to regenerate natural capital in other parts of the state.

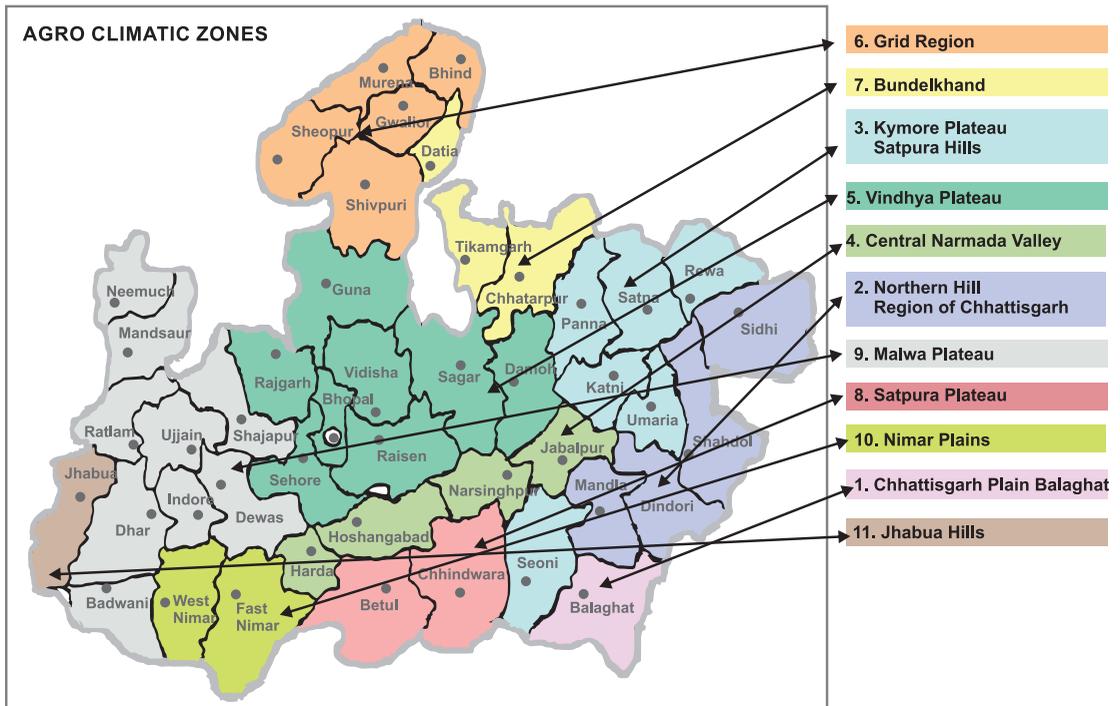
In the second half of the first day, participants were divided in three groups namely Land, Water and Forest to discuss and deliberate related issues in more detail. The second day of the workshop started with presentation by each group on their group work. Presentations highlighted issues related to the resources and ways to re-generate them. The last session of the workshop headed by panel including Ms. Urmila Shukla, Mr. Vijay Mahajan, Mr. Sandeep Khnwalkar, Prof. Somnath Ghosh, Mr. Amod Khanna and Mr. T. Kapoor.

Mr. Vijay Mahajan explained the idea of Panchmukhi Samvaay and tried to connect it with the issues highlighted in the group presentations. He also used this framework to derive action plan. Other panel members responded on the idea of Panchmukhi Samvaay and future action plan. This report documents discussion and deliberation in brief around three natural capital- land, water, forest and Panchmukhi Samvaay.

2. Regeneration of Land

Land is important natural resource in the state and agriculture contribute substantially in the Gross Domestic Product of the State. There are eleven agro-climatic zone in the state, which provides for production of all major crops including wheat, rice, soyabean, cotton, pulses, jwar, bazra etc. these agro climatic zone includes Chhattisgarh Plain, Northern Hill region of Chhattisgarh, Kymore Plateau, Central Narmada Valley, Vindhya Plateau, Grid Region, Bundelkhand, Satpura, Malwa, Nimar and Jhabua Plateau. The Malawa Plateau is the largest agro-climatic zone followed by Kymore and Vindhya Plateau. The eastern region of the state has mixed red and black soil; Northern Alluvial soil; central and western region has Shallow and medium back soil and southern part has medium and deep black soil³. The annual rainfall in the state varies from as low as 80CM to 150 CM.

Agro-climatic Zones in Madhya Pradesh



A large population of the state is dependent on agriculture; however, its contribution to state domestic product is minimal. As against more than half of population of the state dependent on agriculture, it adds up to merely one fourth of Net State Domestic Product⁴. Moreover, the land resources in the state is facing several challenges such as rapidly degrading and

3 <http://jnkvv.org/PDF/AERC/Study-112.pdf>

4 https://www.in.undp.org/content/dam/india/docs/madhyapradesh_factsheet.pdf

desertification of land, soil erosion, decreasing soil fertility due to excessive use of chemical fertilizers and GM crops, drought and impact of climate change. According to a latest assessment of ecological sustainability of agriculture in India, Veluguri et al (2019) found that Madhya Pradesh has mediocre performance in terms of sustainable agriculture. The report warned the state for rapidly degrading agriculture land, ground water depletion, unsafe wells and shrinking diversity in cropping pattern⁵. ISRO report on land degradation on the other hand calculated that 32,462 Hectare land has been degraded from 2003-05 to 2011-13 in the state. Major causes of land degradation in the Madhya Pradesh are vegetation degradation and water erosion⁶.

Land Desertification/Degradation in Madhya Pradesh

Process of Desertification/ Land Degradation	2011-13		2003-05		Change (ha)
	Area (ha)	Area (%)	Area (ha)	Area (%)	(2011-13)-(2003-05)
Vegetation Degradation	25,23,801	8.19	25,14,983	8.16	8,818
Water Erosion	11,25,418	3.65	11,20,221	3.63	5,197
Water Logging	7,788	0.03	7,788	0.03	0
Barren/Rocky	31,495	0.10	30,457	0.10	1,037
Manmade	19,454	0.06	16,024	0.05	3,430
Settlement	96,359	0.31	82,379	0.27	13,980
Total Area under Desertification	38,04,315	12.34	37,71,853	12.24	32,462
No Apparent Degradation	2,65,02,030	85.98	2,66,48,676	86.45	-1,46,646
Total Geographical Area (ha)	3,08,25,200				

Source: ISRO, 2016

Madhya Pradesh has in past few years witness aggressive outrages of farmers due to persistent agrarian crisis. A study on agrarian crisis conducted by Institute of Good Governance and Policy Analysis, GoMP in 2018 highlighted various reasons behind farmer unrest in the state. Apart from issues of governance, the study identified yield, insurance and price fluctuation as major reasons of farm crisis in the state. The study also hinted towards degradation of land, adverse impacts of climate change and decreasing soil productivity⁷.

⁵ Veluguri, Divya, Ramanjaneyulu G, and Lindsay Jaacks, 219, 'State wise report cards on ecological sustainability of agriculture in India', *Economic and Political Weekly*, Vol. LIV No. 26&27, June 29, 2019.

⁶ https://www.sac.gov.in/SACSITE/Desertification_Atlas_2016_SAC_ISRO.pdf, ISRO, 2016, 'Desertification and land degradation atlas of India', Space Application Centre, Indian Space Research Organization, Government of India.

⁷ <http://www.aigppa.mp.gov.in/images/files/pdf/Agriculture%20Distress%20and%20Farmers%20Unrest%20in%20>



2.1 Group Discussion- Land Regeneration in Madhya Pradesh

Retired engineer Mr. Tilakraj Kapoor moderated the part away group of the workshop for detail discussion on Land Resources. This group was consisting of people representing revenue and land resource officers, civil society organization, community level workers and policy research organization. The group touched upon issues related to laws, governance, management and land degradation in the discussion. The group found that most of the laws were framed in British regime and the purpose of those laws was to control. However, now the context has changed, but our land laws remained same. Therefore, review of such laws is required from governance and speedy service delivery point of view. The disputes related to land have also increased enormously in last many decades, but our system of dispute resolution remains conventional and therefore leading to delay. For the speedy resolution of disputes, use of technology such as IT and fixing accountability of concern authorities is highly recommended.

The group also deliberated on land records in detail. Land classification system at present is based on compartmentalized approach. This needs through review to provide descriptive, predictive and prescriptive information to all decision support systems. State has taken some initiatives to bring some land records to GIS platform but we have to move a way ahead in this direction for ensuring speedy service delivery. While Computerization of land records is done to a large extent in Madhya Pradesh efforts need to focused on Mutation

computerizing, Issuance of digitally signed record of rights (RoR), Digitization of Cadastral Maps, Verification of Spatial data, linking of Cadastral maps to RoR and Real time updating of RoR and surveyed maps Area need further attention.

Resource integration and opportunity costs of various resources are absent at present in land use and need to be emphasized. Presently there is no consideration of foot-print approach in resource related decision making. This needs radical thinking to ensure sustainable resource optimization. Soil erosion rate is too high in some specific soils like alluvium and such areas are good for ground water recharge, such areas could be taken for integrated water and soil conservation programs. The group also recommended following initiatives for the conservation of land and reforming land related policies.

Recommendations for Regenerating Land Resources	
Conservation/Sustainability	Policy/Institutions/Programs
<ul style="list-style-type: none"> • The lack of awareness and unsustainable farming practices is major constraints. The productivity of the land can be improved by reduction of carbon content in soil, organic farming, zero tillage and flood moderation. • Use of organic manure will also reduce surface and ground water contamination though excessive use of pesticides and insecticides. • When an activity adversely affecting the land conservation is permitted for some compelling reason provision shall be mandated to recover at least twice the poor land area to good land area. • Plantation projects shall be encouraged on barren lands by using improved methods. • Depletion of ground water and change binding properties of soil has added to landslides. 	<p>Management:</p> <ul style="list-style-type: none"> • Accountability shall be clearly defined in all departmental manual. • Public awareness building shall be taken as key-activity for any intervention. • All land records must be GIS based and shall be in public domain to enable people verify titles and encumbrances. • Land use classification must be purpose linked and shall be scientifically defined by taking land as a resource that finds integration opportunities with other resources • Urban development boundaries must be well defined and shall not be permitted to grow. If expansion is necessitated for compelling reasons, it must be on the concept of satellite townships developed on a land reserved for an inferior purpose. Such development shall be planned and taken-up to the laid down standards. Connections to such satellite townships must be planned to cater for development peaks. • Once the rules of the game are clearly articulated permission for land use-diversions must be decentralized through rule-based automation. The rules must clearly fix the accountability of individuals towards various steps of providing the data used for decision. This shall simplify decision making and adherence to rules. The decision of such decentralized bodies shall be binding unless a case is ordered for reopening by a higher authority on the basis of non-adherence to rules. Timelines shall be integral part of all such decentralized decisions • While governance laws are centrally established, service delivery shall be decentralized with clear accountabilities

Conservation/Sustainability	Policy/Institutions/Programs
	<p>Institutional:</p> <ul style="list-style-type: none"> • Various construction departments are engaged in developmental activities of civil engineering domain. This has caused compartmentalization. Added to this is underutilization of skilled human resources causing organizations overheads eating away the developmental funds. • Trainings designed for human resources are based on traditional competencies and no effort is made to update the institutional capacity with present day knowledge and skills. • Poor focus on creation of knowledge assets and knowledge management. • Poor focus on motivational, inspirational, and team building exercises. • Almost all departments need alignment to present day IT-enabled scenario; Most work-flows can be moved to electronic-workflow, but this idea is absent in Government. Almost all departments need institutional restructuring. • Almost all sectors need technology updating <p>Finance:</p> <ul style="list-style-type: none"> • Government has invested, invested and invested in past; now is the time to consider all developmental investments as business investments and some revenue generation must be an integral part of all investments. • This idea needs elaborate brain-storming session and series of discussions. • Policies: • Land as a resource is what we see in present policies and this must find a place in policies as integrated resource development and sustenance. Once the policies are updated, the legislative framework will need updating to meet the needs of new policies.

3. Regeneration of Water Resources

In terms of water resource, the state is blessed with many major river basins, sub-river basins and watersheds. Major rivers of the state like Ken, Betwa and Chambal flow northward and meet Yamuna, whereas river Sone meets Ganga. Rivers Narmada, Tapi and Mahi flow westward and meet Arabian Sea and Pench River meets Godavari in the south. The total annual run-off estimated in the state from these major rivers is 81,719 HM out of which 49,743HM can be harnessed for irrigation purpose⁸.

The Madhya Pradesh is dependent on rainfall for its water requirement that range from 60 to 150 cm in different region of the state. The rain fall has been erratic but the changing climate trends due to changes in climatic conditions have sharpen the gap between cases of water deficient and excessive rain fall in a year. Normally the western and northern part of the state is



low rainfall region compared to the rest of the state. Pond and lakes are crucial source of water in the state, as they hold nearly 30% of surface water⁹. However, many media report and studies in last few years found that large number of ponds and lakes have dried or encroached in last few decades.

Rivers including the largest river in the state Narmada is facing existential crisis. A recent report by World Resource Institute (WRI) revealed that Narmada basin is one among six river basins in the world is in danger. In 2018 for the first time, Narmada River dried in many places in Madhya Pradesh and Gujarat¹⁰. Other than Narmada, many other rivers in the state have completely dried. Department of Rural Development of Madhya Pradesh has submitted a report saying that more than 40 rivers went dry even before the onset of summer¹¹. This had pushed around 4000 villages in the state to face drought even before

8 <http://mpenvis.nic.in/index1.aspx?lid=1796&mid=1&langid=1&linkid=1312>

9 [file:///C:/Users/RGF/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/water%20sanitation%20madhya%20pradesh%20policy%20\(1\).pdf](file:///C:/Users/RGF/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/water%20sanitation%20madhya%20pradesh%20policy%20(1).pdf)

10 <https://www.wri.org/blog/2018/04/its-not-just-cape-town-4-shrinking-reservoirs-watch>

11 <https://www.newslick.in/close-4000-madhya-pradesh-villages-stare-acute-drought>

summer. A study conducted by Centre for Science and Environment (CSE) in 2012 found that major cities of the state polluted their traditional water sources- mainly lakes and streams by discharging sewage discharge. Now all major cities are heavily dependent on Narmada for their drinking water requirement ignoring local sources at their own peril¹².

The ground water is crucial for irrigation and drinking water in the state. The average ground water development is around 54%, however, there are many regions in the state, where ground water has been overexploited. Districts like Ujjain, Tikamgarh, Shajapur, Ratlam, Neemuch, Mandsaur, Indore, Dewas and Agar are facing environmental and ecological crisis due to over extraction of the ground water. Overwhelmingly, 17.43 BCM water out to total 18.88 BCM ground water extracted in a year is used for agriculture in the state¹³. Moreover, a recently published report by Central Ground Water Board in 2017 found that the in many places the contamination of ground water is very high. The report revealed that more than 30% wells have nitrate contamination beyond permissible level. Similarly, it had found issues related to Salinity, Chloride, Iron and Fluoride contamination¹⁴.

3.1 Group Discussion - Water Resource Regeneration in Madhya Pradesh

The discussion on water resource in the workshop was longer compared to other two natural resources. Apart from detail group discussion, there were two sessions by Mr. Vijay Mahajan and Dr. Ashok Khosla. Dr. Khosla explained water crisis in cities where poor are forced to pay much higher cost of water compared to relatively rich city dwellers. He stressed on assessing water resources available in the city to highlight major gaps and inequities. He suggested Sankey diagram method for analyzing water situation in every city. This exercise is a step to resolve the problem. To address the problem of water crisis in cities, he suggested requirement of co-ordination and coherence among various agencies and stakeholders as pre-requisite. To ensure water for all the planning in cities must assesses four types of water supply cost for each community. These costs includes operational cost, coping cost and opportunity cost an external cost which involves health risks due to contaminated water. Addressing these, cost will help in ensuring water for all at affordable cost.

Mr. Vijay Mahajan talking about water crisis in rural areas focused on water usage and its efficiency. The agriculture sector consumes more than 80% of total water in India, but this sector contributes only about 14% to the GDP. Such a huge gap in input as water and output as contribution in the economy is highly unsustainable, which needs to be re-structured. As a suggestion, Mr. Mahajan proposed for mandatory water harvesting by farmers as

12 <https://www.cseindia.org/restore-your-lakes-and-ponds-augment-sewage-treatment-cse-suggests-to-madhya-pradesh-4327>

13 <http://www.mpwrdd.gov.in/documents/18/9ad06767-35c0-4e4f-867e-6f91a1d78500>, CGWB, 2019, 'Dynamic Ground Water Resources of Madhya Pradesh-2017', Central Ground Water Board, Govt. of India, Jan, 2019

14 <http://cgwb.gov.in/Regions/GW-year-Books/GWYB-%202016-17/M.P.pdf>, CGWB, 2018, 'Ground Water Year Book- Madhya Pradesh (2016-17)', Central Ground Water Board, Govt. of India, January 2018.

against their water use. He argued that the concept of right to water could be taken forward provided that each one should take responsibility to conserve it. He also advocated that the concept of farming needs re-thinking. We should move beyond cultivation of grain and other food products. Many people are now cultivating solar energy from their uncultivable land in Gujarat. Similarly, in forest area, tribal can go for innovating tree based livelihood.

The part away group of participants on water resources discussed water resources in Madhya Pradesh in much detail. They were asked to assess current situation in the state and identify possible ways for water conservation and policy reforms. The group recommended following initiatives for the conservation of water and reforming water related policies.



Recommendations for Regenerating Water Resources	
Conservation/ Sustainability	Policy/Institutions/Programs
<ul style="list-style-type: none"> • Agro-climatic zone wise crops should be promoted. There should be a system to incentivize/disincentives for the promotion of such crops. Farmers as well as government need technical guidance to promote this. • Diversification of farming system: agriculture-aquaculture-animal husbandry. Farming should be encouraged for adoption of new technology such as drip irrigation. • Balance sheet of every farmer should be prepared to assess water drawn and water conserved. • Government does not have the sole responsibility to conserve water. Every household has the responsibility to conserve water. Area specific water conservation guidelines should be prepared. • Installation of bore well and its use should not be allowed unless stated conditions are met. • Technical advancement, through mechanisms of financial incentives and dis-incentives need to be introduced for recycling, recharge and treatment of grey water at site. 	<p>Policy</p> <ul style="list-style-type: none"> • Policies should move mere from guiding principles to measurable actions. It should target conservation of minimum 30% of rain. Area specific researches in the sector of water resources should be promoted in academic institutions. Policies must incorporate topographical diversities available in the country. Conjunctive use of water is required in agriculture and other related sector. • Groundwater Model bill that has been developed by central government, State government should think of re-drafting it according to hydrological status of the state. <p>Water Management</p> <ul style="list-style-type: none"> • Integration in implementation of water and infrastructure related project is required to streamline governance and ensure better output. • People’s participation in governance of water management is required. It will help in bringing transparency and accountability in the system. Community can also be involved as a key stakeholder in pooling financial resources. • Treatment of grey water at site in large buildings (malls, government/ private building, societies) • Audit of water structures are equally important as audit of water usage. Such audit should lay down benchmarks of efficiencies and determining responsibilities to maintain efficiencies of water structures • The water charges should be rationalized which includes introducing slab metering mechanism. There must be restriction or law to enforce so as avoid construction of Bore wells and Dug well. • Before construction of lake/ Pond identification of its water quality is important otherwise it affects the quality of entire groundwater • Collection, management and accessibility of water related data is a major hurdle in planning effectively. There should be mechanism to ensure reliable data available publically. • Leakages and thefts that contribute to high cost needs to be addressed administratively and politically • Ground Census to be made regular that should become the basis for regulating use of groundwater e easily available. • Water budgeting must be included in the system to sensitize users on the significance and importance of sustainable use of water

Water Harvesting

- Watershed based drainage planning
- Water harvesting should be made compulsory in all sectors and mechanisms based on incentives and penalties be placed for its implementation.
- Water harvesting by farmers must be enforced and separate target for water harvesting should be set for landholder in hilly areas and plane areas. Water harvesting initiative should follow watershed based drainage planning. Price of water should be added while calculating cost of production of crops for a realistic assessment of cost of resource used
- Old methodology and designs of water conservation structure should be updated with current situation that deal with climatic change scenario as well. Water sources sensor should be available to regulate water source and Dug wells. Idle structures such as tanks or wells, which are abandoned, must be rejuvenated before going for new construction.
- In River Rejuvenation, projects are steps in correct direction. This should be done in mission mode with full participation from communities.
- Avoid interference to natural river flow condition.



4. Regeneration of Forest Resources

Nearly 31% of the geographical area of Madhya Pradesh comes under forest department governed as protected, reserve and unregulated forest. However, the actual forest cover accounts for 25.11% of the total geographical area. As per the latest State of Forest Report – 2017, state's forest cover is 77,414 sq. km. amongst all states in India; Madhya Pradesh has largest forest cover. Over the decades, the density of forest cover has decreased in the state. Today, nearly 43% of total forest cover in the state is graded as open forest with canopy density less than 10 per cent¹⁵. The density of forest cover is unevenly distributed across the state. Balaghat, Mandla, Dindori, Betul, Deoni, Chhindwara, Shahdol, Harda, Dheopur, Sidhi are some of densely forested districts¹⁶.

Forest Cover in Madhya Pradesh

Type of Forest	Forest cover Within Recorded Forest Area (Area in Sq km)	Forest Cover Outside Recorded Forest Area (Area in Sq km)	Total Forest Cover (Area in Sq km)
Very Dense Forest	6149	414	6563
Moderately Dense Forest	30426	4145	34571
Open Forest	27904	8376	36280
Total	64479	12935	77414

Source: State of Forest Report 2017

Nearly 18% (16,989 sq.km.) of the total area under the forest department of the state is categorized as open area where the canopy density is not even 10 per cent. The department has 64 divisions to govern forest with 10 national parks and 25 wildlife sanctuaries. Recently the central government has recognized it as 'Tiger State' as it remains the most favourable location for tigers.

Forest in the state provides range of timber and non-timber forest produce. Teak and Saal are two main valuable timbers available in these forests in large number. Apart from this, many non-timber forest produces are also available in these forests. These products include Tendu leaves, Sal seeds, Kullu gum, Aonla, Achar, Mahua and Lac. Nearly 27% of state's population is tribal and they are heavily dependent on forest for their livelihood. Collection of these forest produces is main source of their income. 11 out of 131 agro-climatic zones of India are located in Madhya Pradesh. This diversity makes Madhya Pradesh natural habitat for nearly 50% of herbs used in the pharma industry¹⁷.

15 <http://fsi.nic.in/isfr2017/madhya-pradesh-isfr-2017.pdf>, FSI, 2018, 'State of the Forest Report-2017', Forest Survey of India, Government of India.

16 <http://mpenvs.nic.in/index1.aspx?lid=266&mid=1&langid=1&linkid=206>

17 <http://mpenvs.nic.in/index2.aspx?slid=599&sublinkid=387&langid=1&mid=1>

4.1 Group Discussion: Forest Resource Regeneration in Madhya Pradesh

The part away group of the workshop for the discussion on regeneration of forest was comprises of people from different background. The group was constituted of people representing academic institutions, forest officers, forest management institutions, civil society organizations, community level workers, policy think tank and government officials. The group discussed forest related issues in Madhya Pradesh in detail. Major concerns raised by the group were related to market driven plantation (such as plantation of eucalyptus for paper industry), undervaluation of forest for forest diversion, limited role of people in the management of forest, lack of trust between community and forest department and degradation of forest in the state.

The group in its presentation highlighted the issues of deterioration of biodiversity due to various reasons. The group found that the ecosystem services in the forest have badly affected in last few decades as the unsustainable human intervention in the form of mining, collection of forest produces and land use change have increased very rapidly. This trend has led to over exploitation of forest, increase in cases of encroachment, decrease in forest thickness and conversion of forest into farm land. Based on the discussion the group recommended following interventions to strengthen conservation work and to frame effective policy framework for better results.

Recommendations for Regenerating Forest Resources	
Conservation/Sustainability	Policy/Institutions/Programs
<ul style="list-style-type: none"> • Forest land without forest needs to be conserved on priority basis • Most of the mining areas are lying in forest both mining and forest policy lacks the components which limits both the users in utilizing their resources • 40% water has to be reserved to conserve and develop forest • Integrated conservation planning, which involves water, forest and land is needed. The focus of conservation should also go beyond and include conservation of soil, insects, wild life and ecosystem services. 	<p>Management:</p> <ul style="list-style-type: none"> • Two forest extremist (conservation oriented and community oriented) are not linked with each other. To have frequent dialogues and exchanges of idea is required between these two views for better and non-conflicting planning and management. • There is need to understand land use pattern for better forest management. Degradation of forest needs to be defined in holistic perspective. The focus should be more on forest fringe area for regeneration. • Forest management should improve using new technologies and idea. These include hydrological monitoring, geo identification of local products for better economic return, involving subject matter expert in the management and so on. • Forest dwelling community should be given equal space in conservation, protection and management. Emphasis should be given on integration of community involvement so that locals will get benefits.

<ul style="list-style-type: none"> • There is numerous micro but outstanding initiatives in India such as Kalpavalli and Poi where community level institutions were created to conserve forest. Policies must draw inspiration from such initiatives. Kalpavalli and Poi village demonstrated that the community owned forest regeneration could increase in water availability beyond 40% in the area. • Shift focus from only tree to other components of forest –specially soil, birds, insects etc • The sustainable management of forest must include four pillars i-e Regeneration of forest, Produce more with less, reduce pollution and prevent degradation. • To involve communities in the task of forest conservation, forests needs to be recognized as means of livelihood for locals. • A guideline for sustainable harvesting of forest produces by communities needs to be developed. Use of community radio can help to have better communication within the area. 	<ul style="list-style-type: none"> • Reduce mistrust between practitioners and policy makers and government department by adopting regular interface meetings. • Community level institutions such as Gram Sabha, SHGs, CBOs, JFMCs and EDCs needs to be strengthen by decentralization of power and responsibility. <p>Finance:</p> <ul style="list-style-type: none"> • Access government funds, whether MGNREGA or CAMPA fund needs to be used to convert degraded forest land • Minimum price has to be declared for NTFP and payment has to be transferred digitally to reduce exploitation • Net present valuation method to be used to understand economic valuation of forest • Corporate Forest Responsibility needs to be promoted to motivate corporate sector to invest in the conservation of forest resources. <p>Policies:</p> <ul style="list-style-type: none"> • Extra efforts are required for the effective implementation of the Forest Rights Act, 2006 and PESA laws. These two laws will bring community together in the task of forest conservation. • Law and policies should be reviewed from community perspective • There is need to develop better instruments to implement national forest policy • State can develop its own forest policy looking at the large forest area and it better management • Address issues related to overlapping issues or contradiction points between different acts and law
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5. Panchmukhi Samvaay (Collaborative Pentagon)

The degradation of natural resources has always been serious issue in the course human development. However, now more than degradation these resources are facing existence crisis due to factors like climate change, global warming and limitless economic growth. While today's human and ecological problem have become highly complex compare to few decades ago, the knowledge and technological advancement have also gained capability addressing complex issues.

Recognizing changes in the ground realities viz role of governments, capital market, innovation, technology and complexity of human and ecological problems, the workshop discussed the idea of Panchmukhi Samvaay (Collaborative Pentagon) as a framework of sustainable community development. This concept recognizes human as one among various essential creature in the entire ecological cycle.

Frameworks for planning community development process have been instrumental in moving closer to the desire result in more effective manner. Many governments and institutions have developed and experimented number of development framework to achieve desire goal. In India, the sustainable livelihood framework developed by DFID has been very popular in designing and executing community development project in the last two decades. This framework attempts to harness five types of capital namely Human, Social, Natural, Physical and Financial.

This framework was developed in around year 2000, but since then a lot has changed in terms of global governance and its priorities, national governments and their roles, changes and innovation in the capital market, drastic shift in people's aspirations and their knowledge base and significant science and technological progress. Institutions in all sectors have evolved greatly and professional specialization helped problematising and solving specific issues. These changes along with many others around us necessitate re-thinking of community development approaches.

The director of RGICS Mr. Vijay Mahajan framed the idea of Panchmukhi Samvaay, around which elaborated discussion held in the workshop. The Panchmukhi Samvaay keeps community in the center of a pentagon as the target of intervention. The objective is to bring social, economical and cultural change without exploiting nature. In fact, it believes that the re-generation of natural capital will catalyze the process of community level change. It promotes strengthening of co-existing relations between human and nature allows both human, other creatures and natural resources to flourish. The ultimate objective of this framework is to not create from nature but to create with nature. This aim of the progress

can be achieved by meaningful collaborating effort by five different types of institutions. These five segments create five corners of the pentagon or five faces (Panchmukhi).

These five segments are (1) Government; (2) Corporate Sector; (3) Civil Societies; (4) Capital Market and (5) Knowledge Institutions. The collaborative action by these five segments is the Panchmukhi Samvaay. While the sustainable livelihood framework gives us, conceptual base for planning community development initiatives the Panchmukhi Samvaay provides pragmatic structure for the implementation of sustainable livelihood framework in the current context.



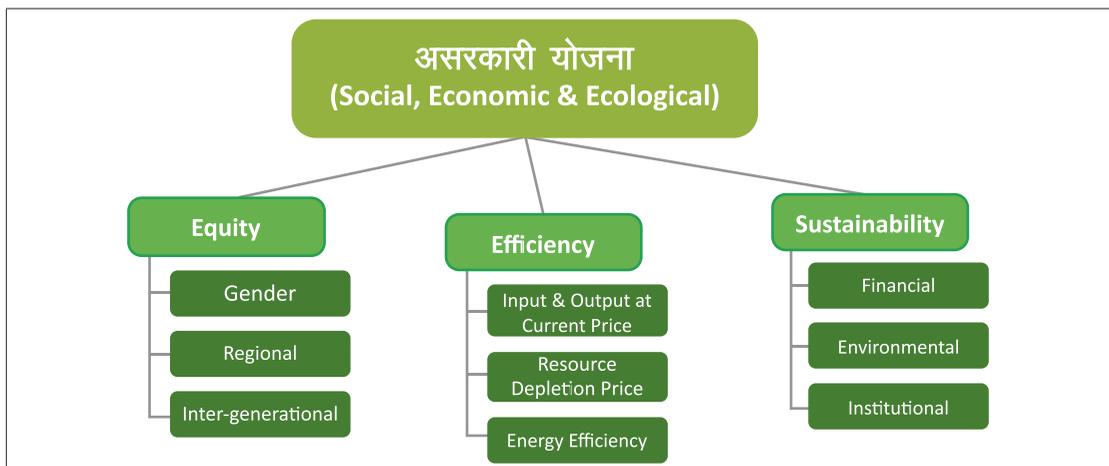
The demands, complexity and cost of managing any of the three resources was so humongous that it was not possible for a single institution - not even the might and resources of the state - to achieve anything significant. The Panchmukhi Samvaay provides for proper resource management required the interactive support and functioning of five key stakeholders. The government is the largest player in the development sector with its immense power of resource allocation, including its role in policy formulation and implementation. The market because of its fundamental concern with ROI and efficiency, plays a role in the purchase, sale and distribution of goods and services, including providing necessary technological support for implementing key development programs.

Civil society institutions (CSI), including but not restricted to NGOs, play a balancing role between the two, also ensuring that the two stakeholders don't get into an unholy alliance as typified by crony capitalism. Moreover, it is only the embedded NGO - as a part of CSI - which can mobilize and organize the forest dwellers, develop norms of working, and train them on aspects of restoration and livelihoods. The knowledge organizations, such as think tanks, universities and other research and policy planning bodies are required because managing large scale program planning and implementation would mean drawing on concepts, theory and technical knowledge.

Finally, one would require vast amounts of financial resources for project implementations; and since no single donor has this capacity, one would need mainstream capital, apart from funding support from multilateral agencies. Moreover, the very inflow of mainstream finance would bring upfront the financial viability of any such project.

The Panchmukhi Samvaay is not a theoretical solution for contemporary problems. Rather it is a pragmatic framework to address social, economic and ecological problems in more effective manner. These five segments bring in institutional and financial sustainability to facilitate environmentally sustainable progress. With substantial change in the role of government post liberalization period, depending on government for financial sustainability is not good option. We have seen governments across the globe have now moved more into regulation and withdrawn substantially from financing programs for social welfare. The government's control over finances and its accumulation has also significantly decreases in last few decades. Therefore, the corporate sector, capital market and people themselves have to find ways to sustain the progress financially. Knowledge institutions, which include research institutions and civil society along with government, have capability of providing institutional sustainability. Typical government departments do not have capability to handle complex social, economic and environmental problems that we have today. We need to go beyond conventional governance model for efficiency.

This idea of Panchmukhi Samvaay attempts to bring effective models of community development. The term effective here constitute three dimensions namely efficient, equitable and sustainable. Efficiency is required to minimize resources and maximize output. On the other hand, the equity is crucial to include socially and economically disadvantaged in the process of change. The sustainability further requires meeting three prerequisites. Any sustainable model must have financial sustainability, institutional sustainability and environmental sustainability.



There is common understanding and perception that policies on paper are good but their implementation is bad. It further leads to bad quality work and ineffective in changing lives of people. This shared understanding deciphers that we have knowledge, skill and intention

required for our betterment but the system in which knowledge, skill and intention interact in order to act is malfunctioned. To make things happening, the machine should function. It should be effective (असरकारी). The Panchmukhi Samvaay aims to make the system असरकारी. Importantly, the process of असरकारीकरण acknowledge crucial role of government in making things effective.

To experiment the Panchmukhi Samvaay framework in Madhya Pradesh the workshop decided to constitute a committee of 13 professionals from different sectors do further deliberation on it. The list of committee member is given in the following matrix.

Jal, Jangal Jameen Panchmukhi Samvaay Committee

S. No.	Name	Organization and Address
1.	Mr. Tilak Raj Kapoor	Retired Secretary, Government of Madhya Pradesh
2.	Mr. Amod Khanna	Director, Towards Action and Learning (TAAL), Bhopal
3.	Mr. Sandeep Khanwalkar	Development Alternative, Delhi
4.	Ms. Sushmita Singha	Water Museum, New Delhi
5.	Mr. Abhilash Khandelkar	Editor, Dainik Bhashkar
6.	Mr. Prasanna Khemariya	CEO, Srijan, New Delhi
7.	Ms. Mona Dixit/Mr. Jeet Singh	RGICS, New Delhi
8.	Dr. Vishal Massey	COO/Secretary, Indian National Association of The Club of Rome, New Delhi
9.	Mr. R.P. Singh	Rtd. IFS Officer
10.	Ms. Madhu Khaitan	PRADAN, New Delhi
11.	Dr. Manisha Pandey	Development Support Centre, Madhya Pradesh
12.	Mr. Vivek Bhatt	WALMI, Bhopal
13.	To be added from commerce/ finance sector	

The committee is expected to meet once in a month to take discussion on Panchmukhi Samvaay forward and discuss policy issues related to natural resources in Madhya Pradesh. The committee will be coordinated by Mr. Amod Khanna and WALMI has accepted to host meetings of the committee in its campus. In the end of the workshop all collaborating organizations namely WALMI, CoR, RGICS and Development Alternative agreed to extend support to the state government on five different issues. These issues includes River Rejuvenation program in Bundelkhand; Organic agriculture; Implementation of Forest Rights Act, 2006 and motivating forest dwellers for changing the idea of cultivation; Youth and employment and finally urban management.



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RAJIV GANDHI
INSTITUTE FOR CONTEMPORARY STUDIES

RAJIV GANDHI INSTITUTE FOR CONTEMPORARY STUDIES

Jawahar Bhawan, Dr Rajendra Prasad Road, New Delhi 110 001 India

T 91 11 2331 2456, 2375 5117 / 118

E info@rgics.org W www.rgics.org