



International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Directive Principles of State Policy for Water Management in Agriculture Sustainability: Legal Frameworks and Policy Approaches

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DOI : <https://doi.org/10.55248/genipi.6.0525.1663>

ABSTRACT:

Agriculture should act as an essential part of human life without this our day to day life will become cursed with various aspects of life's threats and reflects in the global economy. Therefore, we need to urge to protect agriculture and its sustainability with the help of available resources. Sustainable agriculture is vital for the well-being of both present and future generations, as it ensures the continued availability of food, the preservation of ecosystems and the growth of economy. With the help of government initiative's and policy frameworks we were able to maintain the equilibrium of sustainability and promotion of agriculture with the help of water resources. In the paper, we are discuss about the overview of sustainable water management in agriculture, including its significance for both environmental and agricultural sectors. And the relationship between DPSPs and water management laws, policies, and frameworks aimed at promoting sustainable agricultural practices.

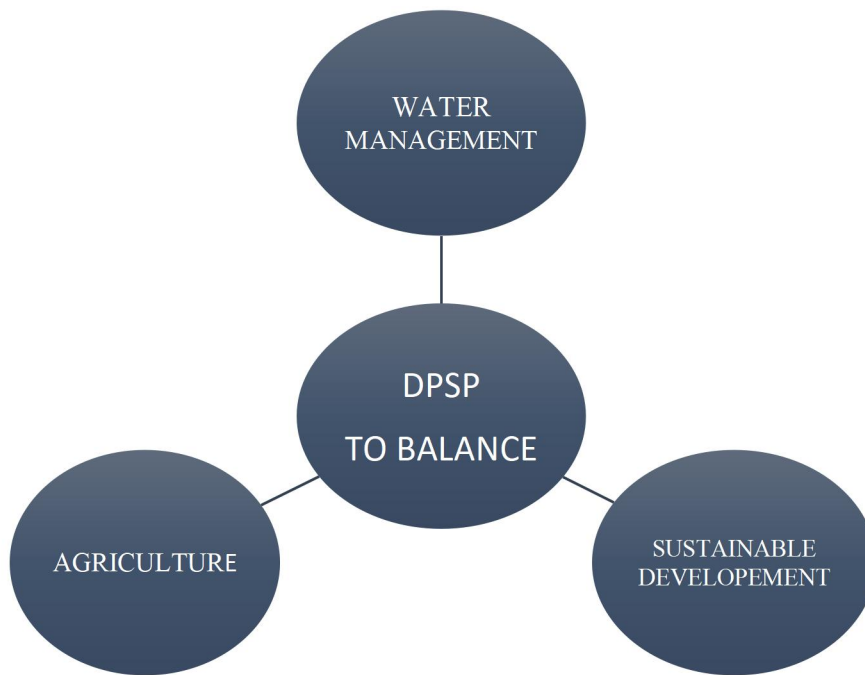
Keywords: Sustainability, Agriculture, Economy, Water management, global economy.

INTRODUCTION

Sustainable agriculture is that aimed to meet current food and fiber needs without compromising future generations' ability to meet their own needs. It involves managing land, water, and resources in environmentally sound, economically viable, and socially responsible ways. Core principles include soil conservation, biodiversity, water management, and pollution reduction. Sustainable agriculture also ensures financial viability for farmers through stable incomes and diversified systems. It promotes social equity through fair labor practices and supports local communities through local food systems. It also focuses on long-term sustainability, adapting to climate change impacts, and resource conservation. Overall, sustainable agriculture aims to ensure food security and the preservation of natural resources for future generations.

Sustainable agriculture and water management are interconnected and crucial for addressing farmer's issues (market price fluctuations, lack of ground water, pest controls and seasonal diseases), climate change, resource depletion, and growing global food demands. Key practices include crop rotation, conservation tillage, agroforestry, organic farming, and integrated pest management.

The relationship between DPSP's in Water Management:



The DPSP's in agriculture:

In generally speaking, it is a duty of the state to secure the interest of common people and promotion of an organized agriculture developments and [animal husbandry](#) on modern and scientific lines. The Directive Principles of State Policy (DPSP) in the Indian Constitution are guidelines or principles set out for the government to follow while formulating policies and laws. They are not justiciable (i.e., they cannot be enforced by courts), but they are intended to create a framework for governance and ensure social justice and economic welfare.

When it comes to **agriculture**, the Constitution under the Directive Principles provides specific guidelines for promoting the welfare of farmers, rural areas, and agriculture in general. These principles aim to achieve equitable development in the agricultural sector. The key Directive Principles related to agriculture include:

Article 48: This article directs the State to organize agriculture and animal husbandry on modern and scientific lines. The government is encouraged to ensure that agricultural practices are efficient, sustainable, and technologically advanced. This article mandates the State to raise the level of nutrition and the standard of living of its people, and to improve public health. In the context of agriculture, this implies ensuring the availability of sufficient, nutritious food, and also promoting better agricultural practices to improve food security.

Land reforms as an inevitable part of a state to encouraging equitable land distribution and making land available to farmers, especially to those from marginalized communities. By, supporting the farmers, by laying down various policies to support the livelihood of farmers through better agricultural practices and access to markets through technology. **DPSP's has strengthened their portion by adding up the Sustainable agriculture** as part of state policy implied under article 48. It encouraging the use of scientific methods in farming to improve productivity while maintaining environmental balance. And also they had focused on the rural development by promoting infrastructure development in rural areas, improving access to irrigation, roads, electricity, and healthcare, which will improve the agricultural sector's productivity.

In summary, the Directive Principles related to agriculture focus on improving the welfare of farmers and agricultural workers, ensuring land reforms, providing access to resources, and promoting sustainable and equitable development in rural and agricultural sectors. These principles guide the government in forming agricultural policies and laws that aim for social and economic justice.

LEGAL FRAMEWORK ON SUSTAINABLE WATER MANAGEMENT IN AGRICULTURE – NATIONAL AND INTERNATIONAL WATER LAWS:

Water management in agriculture is essential for sustainability, and efficient techniques include drip irrigation, rainwater harvesting, water-efficient crops, soil moisture monitoring, and water recycling. Climate change and water scarcity pose challenges, but sustainable agriculture practices can help buffer against these by improving soil health and water retention. Water scarcity can be addressed by allowing crops to thrive with less water, while soil health and water quality can be improved by reducing pesticide use and minimizing soil erosion. The unsustainable use of natural resources due to human population growth has led to depletion and threats to ecosystems. Water policies in the past two decades have focused on expansion and physical availability without sustainability, resulting in poor management of institutional structures and water resources. In India, water rights are linked to land property rights, leading to groundwater overexploitation and a decline in water. To ensure sustainable agriculture and water management in the long term, innovation in technology, policy, and community engagement will be critical. Smart irrigation systems, which use sensors and data

analytics to optimize water usage and minimize waste, are essential. Governments should encourage policies that support sustainable practices, provide incentives for water-efficient technologies, and protect water sources. Farmers must also be educated on water-efficient agricultural practices, soil health, and the importance of conserving water for future generations. By combining sustainable agricultural practices with effective water management, agricultural systems can become productive and resilient, supporting both human and environmental health.

INTERNATIONAL LEGAL INSTRUMENTS ON AGRICULTURE AND SUSTAINABLE DEVELOPMENT:

In the movement of sustainable development in agriculture sector and perseverance of traditional knowledge and natural resources. Conventions and treaties and policies has introduced before the international forum to meet the equilibrium of human needs and existing resources.

- **International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)** a legally binding international agreement that strives to conserve and sustainably use plant genetic resources for food and agriculture. This agreement upholds farmers' rights to save, use, trade, and sell seeds that have been saved on their farms and acknowledges the value of traditional knowledge. By giving access to a variety of plant genetic resources—which are essential for creating robust and sustainable farming systems—the ITPGRFA can advance agriculture.
- **THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC):** The Paris Agreement aims to address climate change by reducing greenhouse gas emissions and promoting sustainable development. Agriculture is recognized as an important sector for achieving the goals of the Paris Agreement.
- **SUSTAINABLE DEVELOPMENT GOALS (SDGS)¹:** The SDGs aim to achieve sustainable development by addressing social, economic, and environmental challenges. Goal 2 of the SDGs aims to end hunger, achieve food security, and promote sustainable agriculture. These international laws and policies provide a framework for promoting agriculture and sustainable food systems at the global level. However, there is a need for greater cooperation and coordination among countries to ensure their effective implementation. Moreover, there are also challenges in promoting agriculture and sustainable food systems at the international level. The effective implementation of these laws and policies at the global level can promote a more equitable, resilient, and sustainable food system for all.

INDIA'S LEGAL FRAMEWORK FOR SUSTAINABLE AGRICULTURE

Agriculture faces legal challenges at the national level, including land use, intellectual property, and food safety. Indigenous communities' traditional knowledge is often overlooked, and intellectual property laws can hinder knowledge sharing and innovations. Food safety regulations are often designed for the industrial food system, failing to address the diverse and decentralized nature of agricultural food production. Brazil has implemented laws and regulations to promote agricultural practices and address environmental and social impacts of industrial agriculture, but their implementation has been uneven and often undermined by powerful agribusiness interests. For example, the Brazilian Forest Code requires landowners to maintain forest cover, but enforcement has been weak, leading to deforestation and soil erosion. The government's agricultural support program is insufficient for small-scale farmers and indigenous communities.

Challenges involving implementing sustainable agriculture: In India, several laws and policies deal with agriculture and sustainable food systems. The following are some of the key laws and policies related to this issue:

NATIONAL POLICY FOR FARMERS: The National Policy for Farmers is a comprehensive policy that aims to address the challenges faced by farmers in India. The policy recognizes the importance of sustainable agriculture practices and local food systems in promoting the wellbeing of farmers and the environment.

NATIONAL MISSION FOR SUSTAINABLE AGRICULTURE (NMSA): Brazil has implemented laws and regulations to promote agricultural practices and address environmental and social impacts of industrial agriculture, but their implementation has been uneven and often undermined by powerful agribusiness interests. For example, the Brazilian Forest Code requires landowners to maintain forest cover, but enforcement has been weak, leading to deforestation and soil erosion. The government's agricultural support program is insufficient for small-scale farmers and indigenous communities. But NMSA only receives 0.8% of the Ministry of Agriculture and Farmers Welfare's (MoAFW) budget. In addition to MoAFW's budget of INR 142,000 crores, the Central government spends roughly INR 71,309 crores a year on fertiliser subsidies. Therefore, even if the Indian government acknowledges the need of advancing sustainable agriculture, the emphasis is still mostly on farming that is driven by the green revolution. Eight of the thirty SAPS practices are given some financial assistance through different Central government initiatives. These include organic farming, an integrated agricultural system, rainwater collection, contour farming (terraces), vermicomposting, mulching, precision farming, and IPM. Since the Indian states have also created exclusive organic agricultural rules, organic farming has gotten the greatest policy attention of all of them.

PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS ACT, 2001:

The Act provides for the protection of plant varieties and recognizes the contributions of farmers in the development and conservation of plant genetic resources. The Act also provides for the recognition and protection of traditional knowledge related to plant varieties.

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NATIONAL ORGANIC FARMING POLICY, 2015: The National Organic Farming Policy aims to promote organic farming practices in India. The policy recognizes the importance of organic farming in enhancing soil health, conserving water resources, and reducing the use of chemical inputs.

MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT (MGNREGA): MGNREGA provides a legal guarantee of 100 days of wage employment per year to rural households in India. The Act also promotes sustainable land use practices and the development of natural resource management.

FOOD SAFETY AND STANDARDS ACT, 2006:

The Food Safety and Standards Act aims to ensure food safety and regulate the production, distribution, and sale of food products in India. The Act also provides for the labeling of organic food products. These laws and policies provide a framework for promoting agriculture and sustainable food systems in India. However, there is a need for effective implementation and enforcement of these laws and policies to ensure their success. In addition to the above-mentioned laws and policies, several state-level laws and programs in India also promote agriculture and sustainable food systems. For example, the state of Sikkim has achieved 100% organic farming through its state policy on organic farming. The state of Andhra Pradesh has also launched a program called 'Zero Budget Natural Farming' that promotes sustainable agriculture practices. Despite these initiatives, there are challenges in promoting agriculture and sustainable food systems in India. The lack of access to credit, markets, and infrastructure, as well as the dominance of chemical-intensive farming practices, pose significant challenges for small-scale farmers who practice sustainable agriculture. There is also a need for greater investment in research and development of sustainable agriculture practices and local food systems. Moreover, several legal and policy gaps need to be addressed to support agriculture and sustainable food systems. For example, there is a need to reform intellectual property rights laws to ensure the protection of traditional knowledge related to seeds and agriculture. There is also a need to reform agricultural subsidy policies to promote sustainable agriculture practices and support small-scale farmers. At the end, while there are several laws and policies in India that promote agriculture and sustainable food systems, there is a need for greater investment and policy reforms to ensure their success. The effective implementation and enforcement of these laws and policies are crucial in promoting sustainable agriculture practices and local food systems in India.

INTERNATIONAL WATER POLICIES AND LEGAL FRAMEWORKS FOR THE PROMOTION SUSTAINABLE DEVELOPMENT²:

Therefore, the international institutions were initiated the many agreements, policies, convention and protocol with respect to water resource management. The Convention on the Protection and Use of Transboundary (Water Convention). The Water Convention and the Protocol on Water and Health are international legal instruments aimed at sustainable use of transboundary water resources. The Water Convention, initially negotiated as a regional instrument, was opened for accession to all UN Member States in 2016³. The Protocol aims to protect human health by improving water management and reducing water-related diseases. The UN Watercourses Convention, the first global convention on transboundary water resources, was adopted in 1997 but entered into force in 2014 due to a slow ratification process. Therefore, the international institutions were initiated the many agreements, policies, convention and protocol with respect to water resource management. The Water Convention and the Protocol on Water and Health are international legal instruments aimed at sustainable use of transboundary water resources. The Water Convention, initially negotiated as a regional instrument, was opened for accession to all UN Member States in 2016. The Protocol aims to protect human health by improving water management and reducing water-related diseases. The UN Watercourses Convention, the first global convention on transboundary water resources, was adopted in 1997 but entered into force in 2014 due to a slow ratification process. The UNECE Water Convention, adopted in 1992, entered into force in 1996 and was opened for accession to all UN Member States in 2016.

The initiative: 2030 Agenda for Sustainable Development⁴

The goal is to ensure universal access to safe and affordable drinking water by 2030, as well as adequate sanitation and hygiene for all, with a focus on women, girls, and vulnerable individuals. By 2030, water quality will be improved by reducing pollution, reducing dumping, and minimizing hazardous chemicals and materials release. Water-use efficiency will be increased globally, and sustainable withdrawals and freshwater supply will be ensured. By 2030, integrated water resources management will be implemented at all levels, including through transboundary cooperation. By 2020, water-related ecosystems will be protected and restored. International cooperation and capacity-building support will be expanded to developing countries in water and sanitation-related activities and programs. Local communities will be supported and strengthened in improving water and sanitation management.

Implementation of Water Policies in India

The water policies in India has dynamic characters, reflecting the changing needs and challenges faced in our country during the past times. The first efforts focused on irrigation and flood control, laying the groundwork for more comprehensive water management strategies. Large-scale irrigation projects were prioritized after independence in order to promote rural development and agriculture. In the 1970s-1980s, the focus shifted towards integrated water resource management, considering the needs of various sectors. The National Water Policy (1987) was introduced to promote optimal and sustainable water utilization, importance for drinking water, irrigation, hydropower, ecology, and agro-industries. Economic liberalisation in the

²Sustainable management of water resources in agriculture, OECD 2010, ISBN 978-92-64-08345-5

³<https://sustainabledevelopment.un.org/topics/water/decisions>

⁴<https://unece.org/environment-policy/water>

1990s brought about significant changes in the policy landscape, with the need for private sector involvement in water management being recognized. The policy encouraged public-private partnerships and emphasized sustainable development and environmental protection.

In 2002, the National Water Policy was revised, focusing more on demand management and equitable water distribution. The most recent National Water Policy (2012) highlighted the importance of water as a vital resource for life, livelihood, food security, and sustainable development. Key recommendations include a national water framework law and comprehensive legislation, treating water as an economic good to promote conservation and efficient use, keeping a portion of river flows aside to meet ecological needs, focusing on adaptation strategies due to climate change, developing a system to evolve benchmarks for water use, setting up a Water Regulatory Authority, removing disparities in water supply stipulations in urban and rural areas, managing water resources projects and services with community participation, providing adequate grants to states for updating technology, design practices, planning, and management practices, and preparing annual water balances and accounts for the site and basin. The Draft New National Water Policy (NWP), 2020, proposes diversifying cropping patterns, reducing the industrial water footprint, mobilizing non-potable uses in cities to treated wastewater, addressing supply side issues, deploying pressurized closed conveyance pipelines combined with SCADA systems, emphasizing nature-based solutions for water storage and supply, replenishing catchment areas, renewing local rainwater harvesting, and forming part of urban blue-green infrastructure.

India's rising water policies show how the nation is becoming more conscious of and responsive to the challenges of water management. The draft amendments of the National Water Policy, 2012, emphasize the significance of considering water as an economic good, guaranteeing fair distribution and incorporating contemporary methods for effective usage. Through creative solutions, community involvement, and improved regulatory frameworks, the proposed National Water Policy seeks to solve India's emerging concerns, such as climate change and diminishing water resources. India can accomplish its water management objectives and ensure a sustainable future for its water resources by emphasizing conservation, efficiency, and resilience.

Central Water Commission:

Initiating, coordinating, and advancing plans to control, conserve, and utilise water resources nationwide, including flood control, irrigation, navigation, drinking water supply, and water power development, in consultation with the relevant State Governments, is the responsibility of the Central Water Commission, a leading technical organisation in the nation with regard to water resources.

AMUL DAIRY COOPERATIVE IN INDIA⁵

Amul Dairy Cooperative is a leading Indian milk producer. It promotes sustainable agriculture practices, including crop diversification and integrated pest management, and encourages the use of organic fertilizers and biopesticides. The cooperative has a decentralized milk collection system, reducing transportation costs and promoting local food systems. It also provides technical assistance to farmers to improve milk quality and productivity. Amul Dairy Cooperative's case studies demonstrate successful models for promoting sustainable agriculture and local food systems, demonstrating the potential for economic, social, and environmental benefits.

Olga Telis v. Bombay Municipal Corporation (1985)

This landmark case highlighted the significance of sustainable agricultural practices, particularly in urban areas. The Supreme Court held that the eviction of pavement dwellers was unconstitutional unless alternative arrangements were made for their livelihood, which included sustainable agriculture on available land.

CHALLENGES FACED WHILE BALANCING WATER RESOURCES AND SUSTAINABLE AGRICULTURE:

The Directive Principles of State Policy (DPSPs) in India provide guidelines for the government to create laws and policies aimed at achieving social justice and improving the welfare of citizens. However, there are several challenges in aligning DPSPs with effective legal frameworks and policy approaches, particularly in ensuring equitable and sustainable water management for agriculture.

1. **Ambiguity in Legal Frameworks:** The DPSPs are non-justiciable, meaning they are not enforceable by the courts. This creates a gap between the intent of the policy and its implementation. Despite DPSPs emphasizing the equitable distribution of resources, the lack of specific legal mandates on water management means that implementation can be inconsistent.
2. **Fragmented and Overlapping Governance Structures:** Water management for agriculture involves multiple actors, such as central and state governments, local bodies, water user associations, and private entities. Each has different priorities, leading to conflicting goals in the implementation of water policies.
3. **Resource Misallocation and Lack of Effective Funding:** Implementing water management practices in agriculture requires substantial investments in infrastructure, technology, and training, but the allocation of resources for water conservation and efficient irrigation systems remains limited.

⁵<https://ilej.iledu.in> INTERNATIONAL ENVIRONMENTAL LEGAL RESEARCH JOURNAL Volume I and Issue I of 2023 ISBN - 978-81-960677-0-0 Published by Institute of Legal Education <https://iledu.in>

Government schemes like the Pradhan MantriKrishiSinchayeeYojana (PMKSY) promote irrigation efficiency, but there is a lack of targeted financial support for small and marginal farmers who often suffer from water scarcity issues.

4. Challenges in Water Use Efficiency and Technological Adaptation: Technological solutions such as micro-irrigation and rainwater harvesting are crucial for sustainable agricultural water management, but their implementation faces challenges in terms of cost, accessibility, and awareness, particularly among small farmers.

5. Climate Change and Water Availability: Climate change impacts severely affect water availability for agriculture. While the DPSPs suggest that the state should ensure a healthy environment, the impact of climate change on water resources is not sufficiently addressed in agricultural policies.

6. Water Rights and Equity: Water distribution for agriculture often leads to conflicts between sectors and among different agricultural communities. There is a need for more inclusive policies that ensure fair allocation of water to smallholder and resource-poor farmers, but the current frameworks often fail to address these inequalities adequately.

7. Inadequate Monitoring and Enforcement: The enforcement of water management policies is weak, and there is insufficient monitoring of water usage, especially in rural areas. The existing legal frameworks do not adequately address enforcement mechanisms for illegal water extraction or the protection of water bodies.

CONCLUSION

The effective management of water resources is pivotal for ensuring the long-term sustainability of agriculture, which serves as the backbone of global food security. The incorporation of directive principles into legal frameworks and policy approaches is essential for creating a balanced and equitable approach to water management. While numerous countries have made strides in incorporating such principles into their laws, challenges remain in implementation due to varying levels of governance, infrastructure, and stakeholder engagement. It is critical for legal and policy frameworks to not only focus on the efficient allocation and usage of water but also on its conservation and equitable distribution across agricultural sectors.

By integrating comprehensive and forward-thinking policies, governments can help foster a culture of water sustainability in agriculture, ensuring that future generations benefit from the available resources. Collaborative efforts between governments, local communities, farmers, and environmental organizations, coupled with consistent enforcement of water management laws, will be key to overcoming current challenges. Ultimately, the alignment of legal frameworks with the sustainable development goals can pave the way for achieving long-term agricultural and environmental resilience.

Therefore, I concluded by ties together the importance of legal frameworks and policy approaches while emphasizing the need for collaborative efforts and a sustainable future in water management for sustainable agriculture

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