



Concept Note

Integrated Water Resource Management (IWRM) for Climate-Resilient Agriculture and Sustainable Development

**Climate Smart Agriculture Youth Network Global
(GCSAYN)**

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1. BACKGROUND

Water is the foundation upon which food systems, ecosystems, economies, and human well-being are built. Yet across many regions of the world, water resources are under increasing pressure from climate change, population growth, unsustainable agricultural practices, and environmental degradation. These pressures threaten food security, biodiversity, and the resilience of communities, particularly in developing regions where livelihoods depend heavily on natural resources.

Agriculture alone accounts for the largest share of global freshwater use. Without effective management, competing demands for water across agriculture, energy, industry, and domestic use can intensify conflicts and undermine sustainable development. As climate variability increases the frequency of droughts, floods, and unpredictable rainfall patterns, the need for coordinated and sustainable water governance has never been more urgent.

Integrated Water Resource Management (IWRM) offers a comprehensive and sustainable framework to address these challenges. IWRM is the coordinated development and management of water, land, and related resources in order to maximize social and economic welfare equitably without compromising the sustainability of vital ecosystems. By promoting collaboration across sectors and stakeholders, IWRM ensures that water resources are managed holistically and efficiently.

2. RATIONALE

For climate-smart agriculture and sustainable food systems to thrive, water resources must be managed in an integrated and climate-resilient manner. IWRM strengthens agricultural productivity through efficient water use, improved irrigation systems, watershed management, and ecosystem protection. It also promotes balanced water allocation among competing sectors such as agriculture, energy, industry, urban development, and environmental conservation.

Youth play a critical role in advancing innovative and sustainable water management solutions. As emerging leaders, farmers, researchers, and policymakers, young people have the capacity to champion practices that enhance resilience, protect ecosystems, and improve livelihoods.

The Climate Smart Agriculture Youth Network Global (GCSAYN), a dynamic network spanning 170 countries across Africa, Asia, the USA, Latin America, and Europe, is uniquely positioned to mobilize young people to advance Integrated Water Resource Management within climate-smart agricultural systems.

3. OBJECTIVE

To promote awareness, knowledge sharing, and youth-led action on Integrated Water Resource Management in support of climate-smart agriculture, sustainable food systems, and resilient ecosystems.

4. KEY FOCUS AREAS

- Awareness and Capacity Building: Strengthening youth knowledge on IWRM principles and practices within climate-smart agriculture.
- Sustainable Agricultural Water Use: Promoting efficient irrigation, water harvesting, soil moisture conservation, and watershed management.
- Integrated Agro ecological Systems: Supporting sustainable crop production, livestock management, aquatic production systems, and forestry through coordinated water management.
- Policy Engagement: Encouraging youth participation in water governance, climate policy discussions, and sustainable agriculture initiatives.
- Knowledge Exchange and Innovation: Leveraging GCSAYN's global platform to share experiences, research findings, and practical solutions among youth and partner organizations.

5. EXPECTED OUTCOMES

- Increased awareness and understanding of IWRM among youth in the agriculture and climate sectors.
- Strengthened capacity of young leaders to implement water-smart agricultural practices.
- Enhanced collaboration among youth, policymakers, researchers, and development partners on water governance.
- Improved integration of water management principles into climate-smart agriculture initiatives.

6. CONCLUSION

Water connects every dimension of sustainable development. Through Integrated Water Resource Management, we can ensure that water resources are managed responsibly, equitably, and sustainably across all sectors. By empowering youth with the knowledge, tools, and platforms to lead action, GCSAYN can play a transformative role in advancing climate-resilient agriculture while safeguarding the planet's most vital resource for generations to come.