# Integrated Water Resources Management in Africa: Balancing Economic Development with Ecological Protection

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# Integrated Water Resources Management in Africa?: Balancing Economic Development with Ecological Protection

**Kariuki Muigua**

***Abstract***

*This paper critically discusses how the human right to water can be achieved in Africa through Integrated Water Resources Management (IWRM). The paper observes that attaining the human right to water remains a key development challenge in Africa. It discusses the main challenges facing the human right to water in Africa. In light of current challenges, the paper posits that it is imperative to promote the human right to water towards Sustainable Development both globally and in Africa. In particular, the paper notes that strengthening governance of Africa's vast and rich water resources can promote the human right to water for Sustainable Development. The paper discusses how IWRM can be effectively utilised to achieve the human right to water in Africa by balancing economic development with ecological protection.*

## 1.0 Introduction

Water is one of the most important natural resources on the planet. For example, it has been observed that safe and readily available water in adequate quantities is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes[1]. Access to fresh water, in sufficient quantity, quality and availability, is fundamental to human life, health, well-being and dignity and is an essential human right[2]. In addition, the United Nations observes that water is a vital resource that is crucial in unlocking Sustainable Development since it is necessary for socio-economic development, energy and food production, healthy ecosystems and for human health and well-being[3].

Due to its fundamental importance, access to safe, adequate and readily available water has been recognised as a basic human right. For instance, the Committee on Economic, Social and Cultural Rights has adopted *General Comment No. 15 on the Right to Water*[4] which recognizes that the human right to water is indispensable for leading a life in human dignity and that it is a prerequisite for the realization of other human rights[5]. It also acknowledges that the human right to water entitles

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[1] World Health Organization., 'Water' Available at https://www.afro.who.int/health-topics/water#:~:text=Inadequate%20management%20of%20urban%2C%20industrial,dangerously%20contaminated%20or%20chemically%20polluted (Accessed on 16/11/2026)

[2] United Nations Environment Programme., 'About Fresh Water' Available at https://www.unep.org/topics/fresh-water/about-fresh-water (Accessed on 16/11/2026)

[3] United Nations., 'Water' Available at https://www.un.org/en/global-issues/water#:~:text=The%20UN%20and%20Water,human%2C%20commercial%20and%20agricultural%20needs (Accessed on 16/11/2026)

[4] United Nations, General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant), Adopted at the Twenty-ninth Session of the Committee on Economic, Social and Cultural Rights, on 20 January 2003 (Contained in Document E/C.12/2002/11)

[5] Ibid

everyone to sufficient, safe, quality, acceptable, physically accessible and affordable water for personal and domestic uses[6]. In addition, a continental level, the African Commission on Human and Peoples' Rights has issued *Guidelines on the Right to Water in Africa*[7]. The Guidelines note that the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses[8]. In addition, the Guidelines state that under no circumstances may an individual be deprived of the minimum essential amount of water for basic human needs and survival[9].

Further, at a national level, the *Constitution of Kenya*[10] enshrines the right of every person to clean and safe water in adequate quantities and to reasonable standards of sanitation[11]. In addition, the *Water Act*[12] provide for the regulation, management and development of water resources and water and sewerage services towards fostering the right to water in Kenya. The Act notes that every person in Kenya has the right to clean and safe water in adequate quantities and to reasonable standards of sanitation as stipulated in article 43 of the Constitution of Kenya[13].

Access to safe, adequate and readily available water is therefore a core human right at the global, regional and national levels. Access to safe water, sanitation and hygiene has been identified as the most basic human need for human health and well-being[14]. The United Nations *2030 Agenda for Sustainable Development*[15] recognizes the crucial role of water and sanitation in development. Sustainable Development Goal (SDG) 6 seeks to ensure availability and sustainable management of water and sanitation for all for human health and development[16].

This paper critically discusses how the human right to water can be achieved in Africa through Integrated Water Resources Management (IWRM). The paper observes that attaining the human right to water remains a key development challenge in Africa. It discusses the main challenges

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[6] Ibid

[7] African Commission on Human and Peoples' Rights., 'Guidelines on the Right to Water in Africa' Available at https://achpr.au.int/en/node/904#:~:text=Thus%20the%20realisation%20of%20the,realise%20the%20right%20to%20health (Accessed on 16/11/2026)

[8] Ibid

[9] Ibid

[10] Constitution of Kenya., 2010., Government Printer, Nairobi

[11] Ibid, article 43

[12] Water Act., Cap 372, Government Printer, Nairobi

[13] Ibid, S 63

[14] United Nations., 'Goal 6: Ensure access to water and sanitation for all' Available at https://www.un.org/sustainabledevelopment/water-and-sanitation/ (Accessed on 16/11/2026)

[15] United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf (Accessed on 16/11/2026)

[16] Ibid

facing the human right to water in Africa. In light of current challenges, the paper posits that it is imperative to promote the human right to water towards Sustainable Development both globally and in Africa. In particular, the paper notes that strengthening governance of Africa's vast and rich water resources can promote the human right to water for Sustainable Development. The paper discusses how IWRM can be effectively utilised to achieve the human right to water in Africa by balancing economic development with ecological protection.

**2.0 The Need for Effective Water Governance in Africa**

Realising the human right to clean and safe water in adequate quantities remains a challenge across Africa. For example, it is estimated that nearly one third of Africa's population lacks access to safe and adequate water[17]. In particular, the water crisis in Africa disproportionately impacts vulnerable and disadvantaged populations including people living in informal settlements, rural residents, indigenous peoples, persons with disabilities and refugees and displaced persons who usually struggle to access safe drinking water and basic sanitation services[18].

Despite water being a fundamental natural resource essential for life, health and development, millions of people across Africa especially in the Sub-Saharan region lack access to clean and safe water for their daily needs[19]. Failure to realise the human right to clean, safe and adequate water in Africa can be attributed to factors such as climate change, pollution, rapid population growth, poor governance of water resources and inadequate infrastructure[20]. In particular, it has been observed that climate change amplifies water scarcity in Africa by disrupting hydrological cycles, altering rainfall patterns, and reducing water availability for crops, livestock, and pasture[21]. Climate change is altering temperature and precipitation patterns across Africa leading to unpredictable rainfall patterns and more frequent and severe droughts affecting water security in the continent[22].

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[17] African Development Bank Group., 'World Water Day 2025: Preserving Africa's Water Resources' Available at https://www.afdb.org/en/news-and-events/world-water-day-2025-preserving-africas-water-resources-81976 (Accessed on 17/11/2026)

[18] Water woes: 13 undeniable facts about Africa's water scarcity., Available at https://www.greenpeace.org/africa/en/blog/55086/water-woes-13-undeniable-facts-about-africas-water-scarcity/ (Accessed on 17/11/2026)

[19] World Bank Group., 'Celebrating Water Day: Why access to clean water is vital for Africa' Available at https://blogs.worldbank.org/en/africacan/celebrating-water-day--why-access-to-clean-water-is-vital-for-af (Accessed on 17/11/2026)

[20] Africa's Water Crisis Require Urgent Action For Clean Water, Climate Resilience., Available at https://pacja.org/africas-water-crisis-require-urgent-action-for-clean-water-climate-resilience/ (Accessed on 17/11/2026)

[21] African Development Bank Group., 'World Water Day 2025: Preserving Africa's Water Resources' Op Cit

[22] African Development Bank Group., 'Climate Change in Africa' Available at https://www.afdb.org/en/cop25/climate-change-africa#:~:text=Africa%2C%20despite%20its%20low%20contribution,losses%20and%20increased%20food%20insecurity (Accessed on 17/11/2026)

In addition, rapid population growth, urbanization and economic development have increased the demand for water in Africa leading to overexploitation of the continent's water resources thus fuelling water scarcity and insecurity[23]. Further, water pollution undermines the human right to clean, safe and adequate water in Africa by contaminating water resources and making water unsafe for human consumption[24]. Plastic waste, industrial waste including untreated sewage, and fertilisers and pesticides used in agricultural activities are polluting Africa's water resources including rivers, lakes and oceans with severe consequences for human and ecosystem health[25].

Poor governance of Africa's water resources also hinders attainment of the human right to clean, safe and adequate water while affecting the continent's development agenda. For example, it has been observed that Africa is home to vital natural water towers, including mountains and glaciers that play a key role in water security and climate resilience[26]. However, due to human-induced climate change, glaciers in the Rwenzori Mountains, Mount Kenya, the Virunga Mountains, and Mount Kilimanjaro are shrinking at an alarming rate and are expected to vanish entirely by 2050, affecting water supplies for millions of people across Africa[27]. Further, deforestation is threatening Africa's water resources. It has been observed that Africa has the highest global net loss of forests when compared to other regions[28]. Deforestation disrupts the role of forests as natural water regulators, leading to water scarcity in Africa[29]. In addition, deforestation causes erratic rainfall patterns and increased floods and droughts affecting water security[30].

The foregoing challenges affect attainment of the human right to safe, clean and adequate water in Africa while also undermining the continent's development agenda. For example, it has been pointed out that inadequate access to clean and safe water in Africa not only poses significant health risks but also perpetuates a cycle of poverty and inequality[31]. In particular, women and girls shoulder a disproportionate burden, often spending long hours each day collecting water, which limits their opportunities for education and participation in the economy[32]. Water scarcity

[23] World Bank Group., 'African water resources : challenges and opportunities for sustainable development' Available at https://documents.worldbank.org/en/publication/documents-reports/documentdetail/867161468767675673 (Accessed on 17/11/2026)
[24] Water woes: 13 undeniable facts about Africa's water scarcity., Op Cit
[25] Ibid
[26] African Development Bank Group., 'World Water Day 2025: Preserving Africa's Water Resources' Op Cit
[27] Ibid
[28] Igini. M., 'Deforestation in Africa: Causes, Effects, and Solutions' Available at https://earth.org/deforestation-in-africa/ (Accessed on 17/11/2026)
[29] Water woes: 13 undeniable facts about Africa's water scarcity., Op Cit
[30] Ibid
[31] Kwakwa. V., 'Celebrating Water Day: Why Access to Clean Water is Vital for Africa' Available at https://www.linkedin.com/pulse/celebrating-water-day-why-access-clean-vital-africa-victoria-kwakwa-3zxke/ (Accessed on 17/11/2026)
[32] World Bank Group., 'Water in Eastern and Southern Africa' Available at https://www.worldbank.org/en/brief/2023/11/07/afe-water (Accessed on 17/01/2026

in Africa is also a major source of conflicts and crises that affect peace, security and development[33].

In light of the foregoing, strengthening water management in Africa is key towards attaining the human right to clean and safe water in adequate quantities for peace and development.

**3.0 Promoting Integrated Water Resources Management in Africa**

In light of current challenges, it is imperative to promote the human right to safe, clean and adequate water in Africa. It is estimated that water scarcity affects one out of three people in Africa with this situation expected to get worse due to rapid population growth, urbanization and increased water demand for agriculture and industrialization among other socio-economic activities[34]. Factors such as climate change, rapid population growth, inappropriate water governance and institutional arrangements, depletion of water resources through pollution, environmental degradation, deforestation, and low and unsustainable financing of investments in water supply and sanitation are some of the main challenges undermining effective water governance in Africa with negative implications on the human right to clean, safe and adequate water[35].

IWRM provides a useful approach towards realising the human right to clean, safe and adequate water in Africa by balancing economic development with ecological protection. IWRM promotes the coordinated development and management of water, land and related resources to maximize economic and social welfare in an equitable manner, without compromising the sustainability of vital ecosystems[36]. IWRM has also been defined as the coordinated management of land, water and other environmental resources for their equitable, efficient and sustainable use[37]. IWRM is based on the idea that water resources are an integral component of the ecosystem, a natural resource, and a social and economic good[38].

IWRM has been hailed as an effective approach that can strengthen efforts towards conserving water resources, while also ensuring democratic participation in water governance for a clean

[33] Kwakwa. V., 'Celebrating Water Day: Why Access to Clean Water is Vital for Africa' Op Cit

[34] World Health Organization., 'Water' Available at https://www.afro.who.int/health-topics/water (Accessed on 17/11/2026)

[35] Valuing Water a Challenge in Africa, Says UN Report' Available at https://www.downtoearth.org.in/news/water/valuing-water-a-challenge-in-africa-says-un-report-76092 (Accessed on 17/11/2026)

[36] United Nation's Environment Programme., 'Integrated Water Resources Management' Available at https://www.unep.org/topics/fresh-water/water-resources-management/integrated-water-resources-management (Accessed on 17/11/2026)

[37] International Water and Sanitation Centre., 'Integrated Water Resources Management: And the domestic water and sanitation sub-sector' Available at https://www.ircwash.org/sites/default/files/Moriarty-2004-Integrated.pdf (Accessed on 17/11/2026)

[38] United Nation's Environment Programme., 'Integrated Water Resources Management' Op Cit

and healthy environment, human health and well-being and economic growth[39]. Through IWRM, it is possible to achieve efficiency in governance of water resources, equity in the allocation of water, and environmental sustainability by protecting water resources and ecosystems from degradation, pollution and climate change[40].

The concept of IWRM is anchored in the principles set out under the *Dublin Statement* which was adopted during *the International Conference on Water and the Environment (Dublin Conference)*[41]. The Dublin principles note that fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment; water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels; women play a central part in the provision, management and safeguarding of water; and water has an economic value in all its competing uses and should be recognized as an economic good[42]. The Dublin Principles therefore envision a holistic and participatory approach to water governance that promotes economic development while also fostering ecological protection.

Embracing IWRM is therefore a key strategy towards promoting the human right to clean, safe and adequate water in Africa. In particular, IWRM focuses on effective and inclusive governance of all water resources, appropriate conflict resolution through collaborative approaches such as negotiation and mediation and pollution control[43]. It has been argued that promoting IWRM ensures good water governance and effective resource management towards Sustainable Development[44]. It is therefore imperative to embrace IWRM towards effectively promoting the human right to safe, clean and adequate water in Africa by balancing economic development with ecological protection.

**4.0 Conclusion**

With Africa facing numerous challenges which undermine the human right to safe, clean and adequate water, there is need for innovative approaches towards bolstering water governance for people and planet. In particular, by promoting IWRM, it is possible to effectively realise the human right to safe, clean and adequate water in Africa through balancing economic development and ecological protection.

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[39] Ibid

[40] Ibid

[41] International Conference on Water and the Environment: 26-31 January 1992, Dublin, Ireland., Available at https://wedocs.unep.org/bitstream/handle/20.500.11822/30961/ICWE.pdf?sequence=1&isAllowed=y (Accessed on 17/11/2026)

[42] Ibid

[43] International Water and Sanitation Centre., 'Integrated Water Resources Management: And the domestic water and sanitation sub-sector' Op Cit

[44] Katusiime. J., & Schutt. B., 'Integrated Water Resources Management Approaches to Improve Water Resources Governance' Available at https://www.mdpi.com/2073-4441/12/12/3424 (Accessed on 17/11/2026)

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