



# Opinion

## Northern Ghana seldom takes water for granted

By Marloes Mul & Laetitia Pettinotti

**W**ORLD Water Day, which is today, March 22 is a good time for Ghanaians to reflect on the

risks of degradation to which the nation's water bodies are exposed, as agriculture, industry, towns and cities all compete for their share and pollute water in the process.

The theme for this year - "Nature for Water" - calls attention to an underappreciated solution to this growing threat. While the conventional response is to sink more money into "built" infrastructure such as (dams, reservoirs and formal irrigation

research in Ghana and other

Union for the Conservation of Nature (IUCN), was to develop evidence-based knowledge that can support better management of natural resources which are vital for communities in the face of climate change and population pressure.

### Where nature has both material and spiritual value

Centering on three communities located along the White Volta River, our study found that they depend on five distinct types of natural infrastructure: protected forest, shrubs and woodlands (degraded forest), ponds, the White Volta River and seasonal floodplains.

These interconnected features of the landscape provide various "ecosystem services" (benefits from nature), some of which depend on seasonal water flows. Annual floods occurring between July and September for example increase

Ponds and the surrounding trees - key features of the region's natural infrastructure - are considered to be the abode of ancestors. One example is the "grandmother crocodile pond" at Arigu, a village in Pwalugu of the Upper East Region. The pond has strong spiritual significance based on a local legend that a female ancestor of the chief was transformed into a crocodile after her death. Her reincarnated spirit, and that of her progeny, continue to reside in the pond in the form of crocodiles.

Both men and women living in communities along the river benefit from ecosystem services. While men focus on activities requiring high capital inputs such as river fishing with nets and boats

human intervention.

Climate change has led to a later start of the rainy season, forcing farmers to delay planting on the floodplains. By thus shortening the growing season - which falls between the start of the rains and the first major floods - this delay increases the risk that floods will occur before harvest, damaging or destroying crops.

The human pressures include over-exploitation of forest resources and the effects of built infrastructure on ecosystems that depend on natural river flows. As more water is allocated through built infrastructure to hydropower and irrigation, the natural flow regime will be affected. Though aimed at fostering much-needed economic growth, built infrastructure, depending on how it is managed could have both positive and negative impacts. By storing flood flows, dams can reduce damage from extreme

floods. However, by reducing the magnitude of smaller, beneficial floods they can also reduce the benefits that these floods bring to local livelihoods.

The Bagré Dam, built in the early 1990s upstream from

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The theme for this year – “Nature for Water” – calls attention to an underappreciated solution to this growing threat. While the conventional response is to sink more money into “built” infrastructure such as (dams, reservoirs and formal irrigation schemes), research in Ghana and other countries suggests that “natural” infrastructure such as (wetlands, floodplains and watersheds), when properly managed, can also help improve the availability of water while sustaining the livelihoods of the many people who depend on these natural resources.

Our research in northern Ghana’s Talensi and West Mamprusi districts clearly demonstrates the multiple benefits of diverse natural infrastructure. Through a “participatory rural appraisal,” we captured the views of local communities on these issues, taking note of the differing perspectives of both women and men.

Our aim, through the WISE-UP to Climate Project, led by the International

(degraded forest), ponds, the White Volta River and seasonal floodplains.

These interconnected features of the landscape provide various “ecosystem services” (benefits from nature), some of which depend on seasonal water flows. Annual floods occurring between July and September, for example, increase soil moisture content and deposit fertile soil along the riverbanks, thereby enhancing crop production after the floodwaters have receded. The floods also fill ponds on the floodplains, restocking them with fish. In the dry season, residual moisture around these ponds provides water for grass that supports livestock grazing.

The communities are, therefore, highly dependent on the river and its seasonal changes shape their livelihoods. Their keen appreciation of the surrounding ecosystems is evident in local beliefs and customs. Under traditional land tenure, for example, the “Land Priest” or “Earth Priest” (Tindana) has symbolic responsibility for major decisions about all natural resources.

communities along the river benefit from ecosystem services. While men focus on activities requiring high capital inputs such as river fishing with nets and boats and irrigated farming, women are more involved in collecting wild fruits, vegetables and nuts, predominantly for home consumption. Men are also moving into cash-making activities, such as the collection of wild honey and sheanuts.

Natural infrastructure, thus, provides the foundation for local livelihoods, supporting the primary means – farming, fishing and livestock – by which communities obtain cash income and food. This infrastructure also serves as a social “safety net” near the end of the long dry season, when food supplies and income from agricultural products have dwindled. To cope with this critical “lean” period, communities collect a wide variety of wild fruits and sheanuts, which they are allowed to collect in small quantities from the protected forests and woodlands. They fish in ponds only at the end of the lean season, when the fish have grown to a considerable size and when villagers are most vulnerable to hunger. This traditional collective approach ensures maximum benefits for women and men.

### Natural resources under pressure

Better knowledge about the benefits of natural infrastructure can help communities and local authorities do a better job of managing these resources. This has become particularly urgent in the face of mounting pressures from two sources: climate change and direct

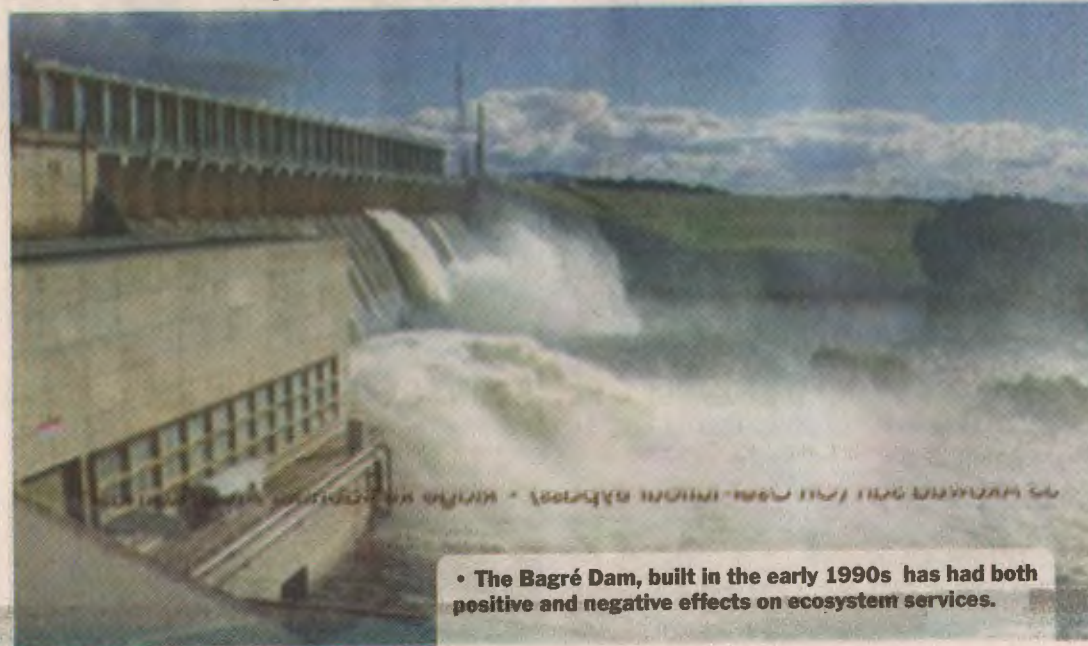
## As more water is allocated through built infrastructure to hydropower and irrigation, the natural flow regime will be affected.

magnitude of smaller, beneficial floods they can also reduce the benefits that these floods bring to local livelihoods.

The Bagré Dam, built in the early 1990s upstream from the study site in Burkina-Faso, has had both positive and negative effects on ecosystem services. By

ensuring a steady flow of water throughout the dry season, it has enabled farmers to irrigate crops and obtain water for domestic use, when other sources (like wells) have dried up. Natural floods, as well as emergency releases of water for dam safety near the end of the rainy season, have led to loss of life and major crop damage due to the uncontrolled nature of the floods. Increased cooperation between the authorities in Burkina Faso and Ghana in recent years has considerably reduced the damage from extreme flooding.

It is envisioned that construction of the planned Pwalugu Dam in northern Ghana for hydropower, irrigation and flood control, with a storage capacity larger than that of the Bagré Dam, will have a significant impact on water flows. While the new dam should further help manage extreme floods, its impact in also reducing the magnitude of medium to large floods could harm rural livelihoods. The challenge for dam operators is to release water from the new dam in a timely manner, providing flows of sufficient magnitude and frequency to maintain ecosystem services but without resulting in large, damaging floods. This is a key part of the wider issue of carefully managing the trade offs between the benefits from hydropower and irrigation, on the one hand, and those provided by natural infrastructure, on the other.



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# Angry uniBank

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• Some customers of uniBank at the Kokomlele branch. Picture: EBOW HANSON



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