



## Major river basins have enough water to sustainably double food production: Page 2

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"The most surprising finding is that despite all of the pressures facing our basins today, there are relatively straightforward opportunities to satisfy our development needs and alleviate poverty for millions of people without exhausting our most precious natural resource," said Dr. Simon Cook, of the International Center for Tropical Agriculture (CIAT) and Leader of the CPWF's Basin Focal Research Project (BFRP).

For example, Cook and his colleagues found that if donors and government ministries put more emphasis on supporting rain-fed agriculture, food production can increase substantially and rapidly. In Africa, it was found that the vast majority of cropland is rainfed and researchers found that only about four percent of available water is captured for crops and livestock.

"With a major push to intensify rainfed agriculture, we could feed the world without increasing the strain on river basins systems," said Cook.

The authors also note that boosting food production in the basins studied requires looking beyond crops to consider more efficient uses of water to improve livestock operations and fisheries. Water policies often ignore the role livestock and fish play in local livelihoods and diets. For example, the researchers found that in the Niger basin, freshwater fisheries support 900,000 people while 40 million people in the Mekong depend on fisheries for at least part of the year. In the Nile, researchers note that almost half of the water in the basin flows through livestock systems.

"The basin perspective is critical in order to assess the upstream and downstream impacts of water allocation policies, and to determine opportunities for optimizing the sum of benefits across many residents," said Dennis Wichelns, Deputy Director General at the International Water Management Institute (IWMI), which was a major partner in the research.

The researchers contrast the poor use of water resources within river basins observed in many areas – which they refer to as "dead spots" for agriculture development – to "bright spots" of water efficiency. They said bright spots can be found in the large areas of the Ganges, Nile and Yellow River basins, where farmers and governments have responded to development challenges by vastly improving the amount of food produced from available water. They also single out "hot spots" – which can be found in the Indus, Yellow, Nile and Limpopo river basins – where there is mounting concern and conflict over sharing water resources and reaching consensus on development approaches.

### Confronting the "Complete Fragmentation" of Water Management

Cook and his colleagues caution that while globally there is enough water to sustain human development and environmental needs, water-related conflicts will continue if particular issues like food security and energy production are considered in isolation from one another. Cook observed that in most areas there is a "complete fragmentation of how river basins are managed amongst different actors and even countries where the water needs of different sectors – agriculture, industry, environment and mining – are considered separately rather than as interrelated and interdependent."

"In many cases, we need a complete rethink of how government ministries take advantage of the range of benefits coming from river basins, rather than focusing on one sector such as hydropower, irrigation or industry," the authors stated.

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