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Healthy ecosystems essential for future food security: global report

A major global report co-authored by an Australian academic highlights the need for healthy ecosystems as the basis for sustainable water resources and stable food security for people around the world, including Australia.



Credit: SciencelImage

According to Charles Sturt University's Professor Max Finlayson, healthy ecosystems help produce more food per hectare of agricultural land, are more resilient to climate change and produce more economic benefits for poor communities.

Professor Finlayson says the main message of the report, *An Ecosystems Services Approach to Water and Food Security*, is that the way the world manages the connections between ecosystems, water and food could help us prevent water scarcity and meet the food demands of a global population tipped to reach nine billion by 2050.

'Diversifying our crops, planting trees on farms and improving rainwater collection are important practical steps we can take to improve these connections,' he adds.

The report urges policymakers to consider farmland, fisheries and other agricultural areas as 'agroecosystems' that provide sources for food and services, such as purifying water and regulating floods.

'The degradation of these other services has already caused the loss of soil nutrients and an increase of soil salinity, which in turn has decreased food production in many major cropping areas, including the Murray–Darling Basin in Australia,' says Professor Finlayson.

'This decline may also be exacerbated by climate change.'

A major challenge to increasing food production is access to sufficient water for livestock, irrigation and fisheries, as well as domestic and industrial uses, says Professor Finlayson.

'Maintaining healthy, resilient ecosystems to ensure water is available for agriculture and other ecosystem services is essential for long-term food security. Groundwater reserves are already in decline in such major breadbaskets as the North China plains, the Indian Punjab and western USA.'

The report shows how an ecosystems-based approach to agriculture could result in more efficient water use, a reduction in the annual loss of up to 10 million hectares of degraded agricultural land, and fewer crop losses due to pests and diseases.

Lead scientific editor, Eline Boelee of the International Water Management Institute (IWMI) – which partnered with the UN Environment Programme (UNEP) in publishing the report – commented that agriculture is ‘both a major cause and victim of ecosystem degradation’.

‘And it is not clear whether we can continue to increase yields with the present practices. Sustainable intensification of agriculture is a priority for future food security, but we need to take a more holistic “landscape” approach.’

Source: CSU, UNEP/IWMI

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