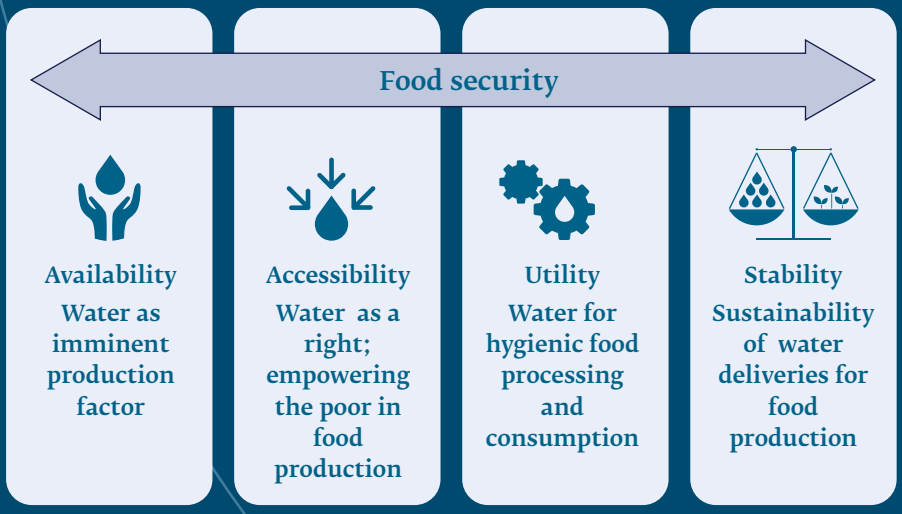
Food and Agriculture Organization of the United Nations

Observations and key messages on freshwater management for food security in Small Island Developing States

How can freshwater management serve food and nutrition security in Small Island Developing states?

Freshwater resources are critical to sustaining and stabilizing food and nutrition security (FNS) in Small Island Developing States (SIDS). Freshwater underpins the four FNS pillars (availability, accessibility, utility and stability) that are needed to diversify food production and curb the triple burden of malnutrition: undernutrition, micronutrient deficiencies and overnutrition.

The SIDS water management road map



Many SIDS have brittle economies, with low income, high unemployment rates and little resilience to natural disasters. These fragilities come to the fore in times of crisis, such as the COVID-19 pandemic in 2020 when transport to the islands was blocked, tourist revenues dropped to zero and expected remittances from SIDS workers living abroad did not arrive.

SIDS opportunities

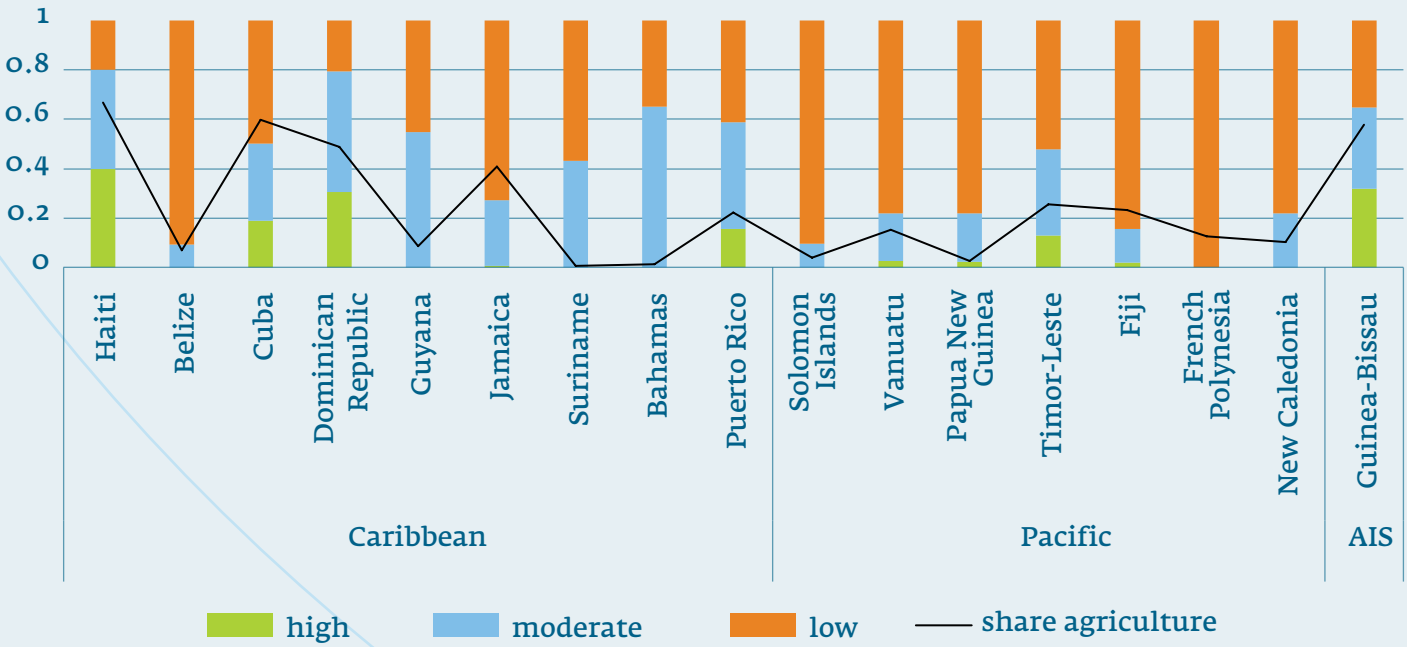
SIDS would benefit enormously from increasing the domestic production of fresh and healthy food and making it available at affordable prices. This would:

- reduce dependence on trading partners;
- provide a buffer for unexpected shocks and natural hazards,
- serve as a first and necessary step in the long battle against malnutrition;
- reverse eating patterns dominated by imported food items that are high in saturated fats and refined sugars.

SIDS challenges

The area available for cultivating fresh and healthy foods has severe land suitability restrictions. Most high-quality land is occupied by monoculture cropping systems that were introduced during the colonial period. On the positive side, the prospects for agricultural development improve under high input conditions, enabling agricultural entrepreneurs to invest in high-value chains that could enrich food diversity.

Land suitability classes for low input levels as share of total land against agricultural land for SIDS countries, year 2017. Source: IIASA & FAO, 2012. Global Agro-ecological Zones (GAEZ v3.0). Laxenburg, Austria/Rome, Italy and own computations based on FAOSTAT, accessed 11/30/2018, Agricultural land. FAOSTAT. Rome, Italy.



The timely delivery of freshwater for crop cultivation, however, cannot be taken for granted. On the contrary, the agricultural sector is in fierce competition with other water users. Most users, like the rapidly growing urban population, are very vocal, but some are silent, such as the ecological flows that preserve the scenic beauty and unique ecosystems of the islands. Furthermore, the inadequate treatment of return flows from households and industry as well as the high concentration of pesticides in the agricultural sector pollute aquifers and coastal areas, compromising human health and ecosystem quality. These often conflicting interests call for a well-informed water governance sector that secures the equitable and efficient allocation of water resources in SIDS.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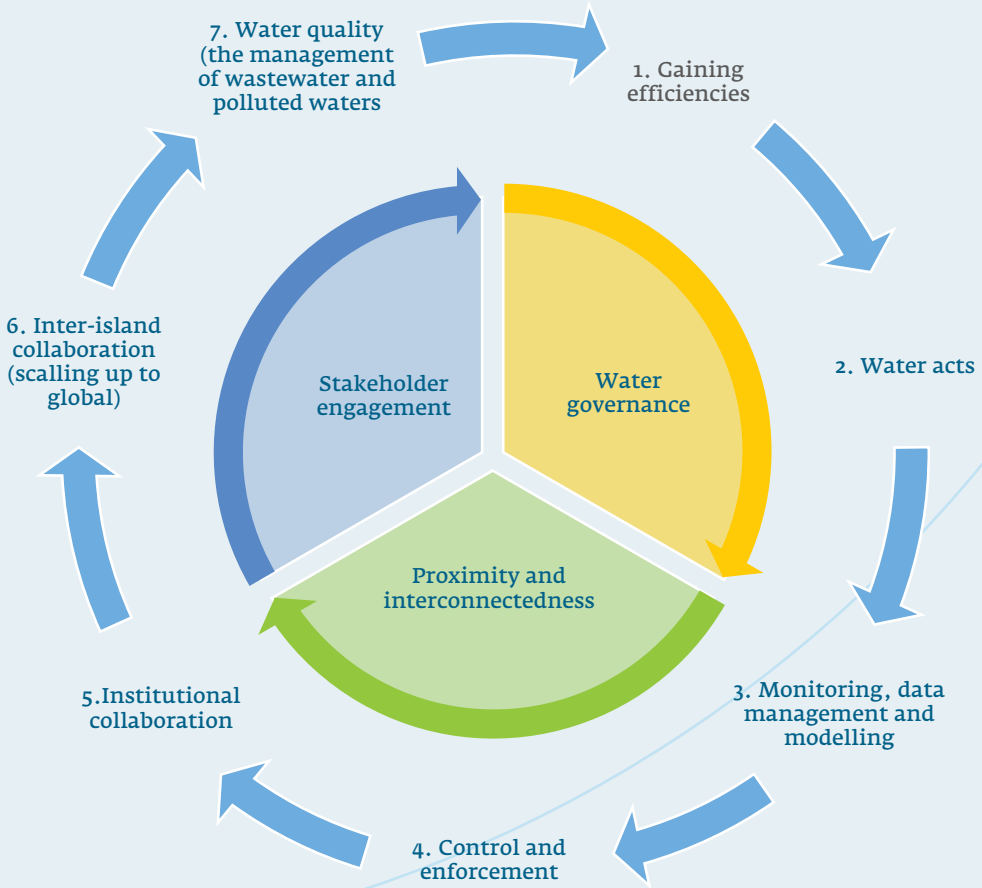
A road map for fostering SIDS strengths in agricultural water management

Policies on the use of freshwater resources in SIDS should capitalize on island strengths. These include the proximity and interconnectedness of water resources and the strong social bonds in the relatively small SIDS communities. Given their geography, culture and history, the SIDS are well-positioned to manage water resources responsibly. This requires that water management issues are put into the broader context of societal concerns and international geopolitics.

Water governance needs to address the heterogeneity of the SIDS, in terms of geography, economy, ecology and polity. Putting such a governance system in place involves a number of steps: fact-finding to characterize water resources; inventory of reports on water management projects, preferably accompanied by an independent evaluation; in-depth interviews with water authorities and water users; and the development of a SIDS-specific road map to bring water resources management to a higher level.

The SIDS water management road map



There is not enough space in this policy brief to do justice to the diversity of the SIDS, and hence the road map presented here should be seen as a framework for action that should be adapted to the circumstances of individual islands. With that in mind, the following steps provide the basis for improving the management of freshwater resources in SIDS:

1. Gaining efficiencies in water conveyance and use. Supplementing rainfed agriculture with additional irrigation expands the possibility for stable multiple cropping schemes per year.
2. Water legislation. The impact of colonial-era legislation on water allocation should be investigated and serve as the basis for amending water rights.
3. Monitoring, data management and modelling. There is a serious need to expand and harmonise collected data and use them to develop analytical frameworks that can both inform decisions on water issues and anticipate the impact of prospective scenarios on water demand.
4. Control and enforcement. Strong control and enforcement measures, together with awareness programmes, are needed to prevent free-rider behaviour by water users. Regulations on water use should be unequivocal, substantiated with empirical evidence and understood by all users.
5. Institutional collaboration. Institutional collaboration on SIDS is generally weak, leaving much scope for evidence-based policy-making and better cooperation between government institutes, NGOs and water users. A transdisciplinary approach is desirable in order to broaden the decision-making process: first to consult and identify problems, next to provide feedback and finally to sustain the intervention in its post-project period.
6. Inter-island collaboration. An active exchange among the islands on successful interventions, policies and lessons learned from past initiatives should compensate for the lack of scale in individual SIDS. FAO's South-South Cooperation programme could play a leading role in fostering inter-island initiatives.
7. Water quality. The small islands do not properly manage the wastewater produced by households and industry nor the polluted water flows from agricultural activities. The management of waste and polluted water should be given the highest priority, to secure human health and prevent the destruction of ecological assets on the islands.

The value of SIDS

The contribution of freshwater management to FNS is particularly apparent in times of crisis when the SIDS need safeguards against food and income gaps. Yet even when such safeguards exist, many SIDS continue to depend on foreign traders for their staple foods. Hence, SIDS should invest in strong and reliable international alliances though which they can exchange innovations on water management, strengthen FNS and collaborate on strategic decision-making. SIDS have much to offer such alliances by collecting unique data for oceanographic and climate change studies, protecting their ecosystems as biodiversity treasures and promoting their authentic culture and vistas as a unique part of world heritage. This calls for a concerted effort by SIDS inhabitants, who recognize that their vulnerable and fragile islands are very much worth preserving.

SIDS freshwater and the SDGs

Freshwater is central to the Sustainable Development Goals (SDGs), especially those concerned with SIDS. It supports food security (SDG2), sustains clean water and sanitation (SDG6), delivers ecological flows (SDG15) and fosters life below water (SDG14) in the unique coastal ecosystems of the island nations.