

Policy pointers

Increasing refugee populations' needs for water and sanitation have exacerbated water stress in Lebanon's Bekaa Valley. But displaced people are not the largest consumers of water, and their needs could be accommodated through careful integration with the demands of other water users.

Rebalancing of water demands and availability requires a level of local information, planning and co-ordination that is not currently available in the Bekaa or many other marginal dryland areas. Filling these gaps is possible, and the scientific process could be accelerated.

Humanitarian crises demand short-term remedies, but can still provide opportunities to address long-term issues including climate change and meeting the Sustainable Development Goals.

Balancing water stress and water availability under a difficult and variable dryland climate requires a dedicated strategy, an effective and sustained collaborative approach, and progressive improvement of public databases and scientific capacities.

Balancing water stress, human crises and innovation under a changing dryland climate

During 2016, IIED explored the intersection of international environmental and crisis agendas in the context of Lebanon's Bekaa Valley, with the help of international, national and local practitioners. Findings confirm that strategic planning to avoid water stress is more difficult during crises. Nevertheless, new opportunities are also created. This briefing summarises recommendations by IIED and Lebanese partners following a series of in-depth analyses, discussion and reflections.

Moving beyond crisis management in the Bekaa Valley

Long-term (and short-term) environmental challenges, including climate variability, water quality concerns and depletion of groundwater tables in the dry areas, have become a feature of life in Western Asia and North Africa. Since the Lebanese civil war, however, the international community and local and state actors have tended to respond to the country's sustainable development challenges in crisis mode rather than with long-term, integrated planning.

The humanitarian crisis in Syria that began in 2011 has amplified ongoing challenges. The UN High Commissioner for Refugees has registered over 1 million Syrian refugees in Lebanon, although the actual number may be closer to 1.5 million.¹ Some 414,000 have settled in the Bekaa Valley due to its proximity to Syria.² In some municipalities, the population and its demand for water have tripled in size since the arrival of displaced people. Wastewater treatment challenges have also increased as many refugees

live in informal, tented settlements without access to adequate sanitation.

The intractability of challenges in the Bekaa Valley reflects institutional constraints rather than lack of local knowhow or innovative technologies. These institutional challenges are compounded by a continuing cycle of short-term crisis responses, destruction of natural resources, displacement and crisis responses again — rather than sustainable development planning.

A new approach is needed from the international community, as well as from local and state actors, to de-escalate and reorient both local and global drivers of water stress. Such an approach could build long-term resilience to climate change, and contribute to achieving and sustaining development, while also responding to the immediate humanitarian crisis. It will have to cost less, achieve more local buy-in and bring more benefits — both to the region and to the international community — than the current pattern of crises and creation of refugees.

Viewing resilience through an environmental lens

Experience in other dryland regions, as well as the available literature on resilience building

versus disaster response, is clear. A repetitive cycle of 'crisis > crisis response > crisis again' is an expression of institutional failure. It sets in motion a dynamic that erodes both social and ecological

resilience, perpetuating ever deeper and more incapacitating crises. However, the international development community has argued it is possible to break the vicious downward spiral and build resilience through local institutions,³ knowledge and innovation.⁴

The international environmental agenda offers an entry-point for local institution building. Environmental issues can represent shared challenges for different stakeholders — even those in conflict. We set out to explore how this might work in the context of a dryland region undergoing both environmental and humanitarian crises.

In dryland contexts, a common environmental challenge is water stress (see Box 1). This is closely related to climate change and variability. In the Bekaa and its surrounding region, these challenges are particularly acute and far-advanced.⁵ The experience and learning process that could emerge concerning water stress in the Bekaa should therefore be of significant interest to the international and regional community, as well as to national and local actors.

Exploring three intersecting agendas in the Bekaa

IIED investigated the intersection between three international planning agendas in the Bekaa: building resilience to climate change, achieving sustainable development and responding to the humanitarian crisis in this context (Figure 1).⁶ We

Box 1. A global commitment to reduce water scarcity

The 2030 target for Sustainable Development Goal (SDG) 6.4 is to substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity. Indicator 6.4.2 measures progress through the level of water stress. This is calculated by freshwater withdrawal as a proportion of available freshwater resources, after considering environmental water requirements (water withdrawal intensity). It includes water withdrawals by all economic activities, focusing on agriculture, manufacturing, electricity, and water collection, treatment and supply.⁷

conducted analytical studies, interviews and discussions with a range of international, national and local actors in the water sector active in the area. In addition, we drew on a wealth of secondary materials and interviews in the field.

From April to December 2016, we shaped and reviewed preliminary findings during a succession of scoping missions, a coordination meeting organised by the Bekaa Water Establishment, and a subsequent reflection meeting for researchers and other actors at the Advancing Research Enabling Communities Center in the Bekaa, which belongs to the American University in Beirut. The reflection workshop included contributions from the Lebanese Agricultural Research Institute and other research institutions, and a series of meetings at the Lebanese Ministry of Energy and Water.

We further reviewed and considered findings through a series of meetings among IIED staff in Edinburgh, London and a range of dryland locations. Detailed reports are available online from IIED.^{8,9,10}

Conclusions

Lack of information and institutional capacity is obscuring opportunities

There is a lack of long-term environmental information, planning and institutional support in the Bekaa. This is compounded by a complex political situation. These factors are distorting the collective vision of the society and obscuring opportunities to reduce water scarcity, pollution, variability and vulnerability to climate change.¹¹ Although the influx of refugees has worsened water stress in the Bekaa Valley, displaced populations are not the largest consumers of water. More careful integration with the spatial and temporal demands of other water users in the area could accommodate the water needs of refugees more harmoniously. This requires careful understanding and analysis of water availability, accessibility, demand and cycling.

The Bekaa Valley needs integrated and long-term solutions, but some crisis responses may actually be helpful. Data-related and institutional constraints, for example, have been contributing to water stress. Some humanitarian activities have been building capacity to address these concerns.^{12,13} UNICEF will make additional materials available soon.

Participatory research can inform strategic planning

Increasing water demands do not necessarily have to increase water stress. Our initial findings show an opportunity to analyse water availability, use and reuse patterns, treatment and quality in order to realign the balance between them.

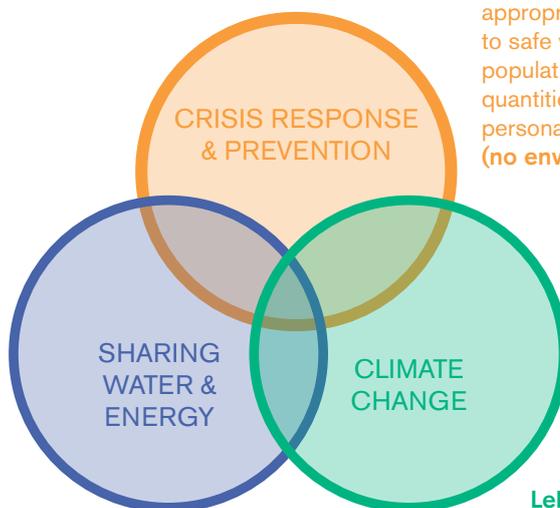
Figure 1. Intersecting international agendas for environment and development in the Bekaa^{5,7,14}

Global Sustainable Development Goals (SDGs) targets:

- SDG 6.1 & 2 'Achieve universal and equitable access to safe and affordable drinking water and sanitation'
- SDG 6.4 'Increase water-use efficiency across all sectors and reduce water stress'
- SDG 6b 'Support and strengthen the participation of local communities in improving water and sanitation management'

Lebanese National Water Sector Strategy

Bekaa Water Establishment
Masterplan until 2035



Lebanese Crisis Response Plan targets (2016–20):

2: 'Ensure sustainable, gender appropriate and equitable access to safe water for the target population in sufficient quantities for drinking, cooking, personal and domestic hygiene' (no environmental target)

Lebanon's Intended Nationally Determined Contribution (INDC) under the UNFCCC

'Adapt to increased climatic variability and anticipated water shortages as well as mitigate emissions (longer timeframe)'

Possible win-win solutions begin by understanding the water cycle and identifying opportunities to overcome water stress. This, in turn, requires researchers and practitioners to work with resource users to understand possible variations of water demand, use and disposal. These resource users include a range of private sector actors and informal or illegal users, as well as vulnerable households.

Lebanese researchers have spent decades studying agricultural water use in the Bekaa.¹⁵ From all accounts, participatory environmental research often takes time and requires considerable support.^{16,17} But where this kind of research informs strategic planning, the benefits can far exceed the costs.

Our findings are encouraging. However, rebalancing of water demands and availability requires a level of local information, planning and coordination still not available in the Bekaa. These gaps can be filled, and the process to do so could be accelerated.

There are also opportunities to compare with experiences in other dryland contexts. Achieving success in the Bekaa will thus require a focused effort from actors at the local and national levels, as well as those engaged in the international crisis response.

Next steps

Crisis support is not enough. There is a strong case to increase international support for long-term engagement with the Lebanese government and research institutions in the Bekaa Valley. This support should focus on building long-term resilience to climate change, and achieving and sustaining development. Various stakeholders at national, local and international levels should work together to refine the cost-benefit analysis of pilot actions to build resilience and rebalance water stress in the Bekaa.

Overall, balancing water stress and water availability under a difficult and variable dryland climate requires:

- A dedicated focus on water and environmental challenges, coupled with an understanding of the inherent climatic variability, resource value and wealth of energies and human capacities that characterise the drylands
- An effective and sustained collaborative approach among all those involved, despite the crisis-driven nature of international and national agendas and
- Progressive improvement of public databases and scientific capacities to assess water availability and uses by different sectors and

groups within them. This process should build confidence in the credibility of this information and capacities for its use in decision making.

Through this exploratory analysis, and drawing on our experience in other dryland contexts experiencing humanitarian crisis, IIED has identified three promising entry-points for balancing water stress and human crises in the Bekaa:

- 1. Enhance information sharing and analysis** to build public confidence in the responsible institutions and systems, support more credible planning and enable participatory assessment of water stress. The Lebanese government and research partners could lead pilot initiatives at regional and local levels over a minimum of 1–3 years and at a cost of £0.5–1 million per year.
- 2. Enable public participation in strategic planning** through climate change mitigation and adaptation planning and financing, involving local governments and resource users. A pilot climate mitigation and adaptation planning process could strengthen local institutions and capacities. It would take a minimum of 3–5 years to establish such a process at the local level, at an estimated cost of £2 million.
- 3. Pilot informed investments across sectors and scales** in selected municipalities to

enhance water resource conditions and economic development, including investments in urban areas. A system for investment, monitoring and assessment to implement and track the impacts of climate mitigation and adaptation on resource conditions and development indicators would take at least 5–10 years to put in place at an estimated cost of £5–10 million.

Lebanon has adapted to crises, and has a well-recognised need for more immediate support. Crises make environment and development planning harder. Field-level observation, implementation, learning and collaboration all become more complicated than in less-troubled environments. But if we wait for the crises in the Middle East to end before we start preparing for a better future, it will never happen.

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Knowledge Products

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Notes

- ¹ RoL (2017) Lebanon crisis response plan 2017–2020. Beirut. <https://data.unhcr.org/syrianrefugees/download.php?id=10181/>
- ² See <https://data.unhcr.org/syrianrefugees/country.php?id=122/> ³ Boustani, M *et al.* (2016) Enhanced local coordination for effective aid provision: the case of Lebanon. IIED, London. <http://pubs.iied.org/17373IIED/> ⁴ Safriel, U *et al.* (2005) Dryland Systems. In: *Ecosystems and Human Well-being: Current State and Trends*. Island Press, Washington. www.unep.org/maweb/documents/document.291.aspx.pdf/
- ⁵ RoL (2015a) Lebanon's intended nationally determined contribution (INDC) under the UN Framework Convention on Climate Change. Republic of Lebanon. www4.unfccc.int/submissions/INDC/Published%20Documents/Lebanon/1/Republic%20of%20Lebanon%20-%20INDC%20-%20September%202015.pdf ⁶ See www.iied.org/sustainable-development-goals-new-negotiation-under-way/ ⁷ See www.unwater.org/publications/publications-detail/ar/c/428727/ ⁸ IIED (2016) Dryland resilience-building under a difficult and changing climate - the Bekaa Valley, Lebanon. Workshop Report, Reflection Workshop, 26 October 2016. <http://pubs.iied.org/G04122/> ⁹ Jaafar, H and King-Okumu, C (2016) Water resources within the Upper Orontes and Litani Basins: A balance, demand and supply analysis amidst Syrian refugees crisis. IIED, London. <http://pubs.iied.org/10174IIED/> ¹⁰ King-Okumu, C *et al.* (2017) Balancing water stress and human crises under a changing climate: integrating international policy agendas in the Bekaa Valley, Lebanon. IIED, London. <http://pubs.iied.org/10175IIED/> ¹¹ Machayekhi, D (forthcoming). Domestic water in the Bekaa Valley, Lebanon: assessing the institutional dimensions and water availability, accessibility and distribution. IIED, London. ¹² UNICEF (2016) Hydrogeological characterization of Hermel Caza. Technical Report. ¹³ See <http://4wslebanon.net:8080/lhsp/portal/> ¹⁴ Lebanon Crisis Response Plan (2016) Energy and water sector results framework (in Excel). 13 Jan 2016. http://data.unhcr.org/syrianrefugees/working_group.php?Page=Country&LocationId=122&Id=6 (last accessed: 19 January 2017). ¹⁵ www.lari.gov.lb/ ¹⁶ Adeel, Z *et al.* (2008) People in Marginal Drylands Managing Natural Resources to Improve Human Well-being. A policy brief based on the Sustainable Management of Marginal Drylands (SUMAMAD) project, UNU-INWEH, Hamilton, ON. <http://inweh.unu.edu/wp-content/uploads/2015/06/People-in-Marginal-Drylands.pdf> ¹⁷ Schaaf, T and Lee, C (Eds) (2006) *The Future of Drylands*. UNESCO. <http://link.springer.com/book/10.1007/978-1-4020-6970-3>