

DESPERATE FOR RAIN IN NINH THUAN: THE DRIEST PROVINCE OF VIETNAM

Introduction about the Community

In partnership with Global Water Partnership (GWP), the Communities of Learning and Practice (CLP), the UNCCD is developing an online platform designed as a collaborative space where professionals, experts, and stakeholders at all levels from around the world can come together to share their knowledge, exchange ideas, and support one another in the pursuit of moving from reactive to proactive drought management approaches.

Case study

Ninh Thuan Province, located on Vietnam's south-central coast, is recognized as the driest region in the country^{1,2}. Ninh Thuan is characterized for tropical savanna and hot semi-arid climates with a long dry season and minimum precipitation³. Despite its climate challenges, agriculture remains the cornerstone of both food security and the local economy of the province. However, this year, Ninh Thuan faces an unprecedented drought, with severe implications for its agricultural sector, local economy, and overall quality of life.

Current Drought Conditions



Figure 1: Dead fishes due to dried up reservoirs in Ninh Thuan⁴

The severity of this year's drought is evident across multiple indicators. Many reservoirs have dropped below the dead storage threshold, leading to widespread fish fatalities⁵ and severe water shortages for agricultural use. Pastures have dried up, resulting in the deaths of livestock such as sheep⁶.

Out of the 23 irrigation reservoirs in the province, three are completely dry, and other five are below the critical storage threshold⁴. This dire situation is compounded by the lack of rainfall for several months. The typical transfer of irrigation water from other lakes has been disrupted as the last remaining source from Ong Kinh Lake has also

¹ <http://imh.ac.vn/files/doc/2022/tap%20chi/SO%20%2022.6.2022%20BAN%20DU.pdf#page=47>

² <https://e.vnexpress.net/vietnam-s-driest-province/tag-1516636.html>

³ https://vi.wikipedia.org/wiki/Ninh_Thu%E1%BA%ADn

⁴ <https://vtcnews.vn/cao-diem-han-han-tai-ninh-thuan-binh-thuan-ho-tro-day-ca-chet-kho-ar863407.html>

⁵ <https://vtcnews.vn/cao-diem-han-han-tai-ninh-thuan-binh-thuan-ho-tro-day-ca-chet-kho-ar863407.html>

⁶ <https://dantri.com.vn/xa-hoi/cuu-guc-chet-tren-duong-do-han-han-keo-dai-o-mien-trung-20240411113436877.htm>

dried up⁴. Farmers now face significant financial burdens, including high electricity costs for pumping groundwater, exacerbating their economic woes when crop prices fail to cover these expenses⁷.

Socio-Economic Impact

The drought has escalated water scarcity for both agricultural and domestic use. Residents are compelled to purchase bottled water for drinking and cooking, while relying on diminishing groundwater for other needs. The exacerbation of this drought by El Niño further intensifies the crisis, pushing local farmers to the brink of abandoning agriculture, which could lead to famine in the region.



Figure 2: People are waiting for domestic water⁸

The Tan My Irrigation System, which extracts water from the Cai River, is somehow sufficient for the North of the province but is unable to alleviate the situation in the southern parts of the province, as many storage reservoirs there remain below the dead storage level⁹. The construction of the Song Than reservoir, intended to regulate and supply water, has faced delays due to issues with land use conversion. The project requires cutting down 112 hectares of protection forest, highlighting the challenges in balancing infrastructure development with environmental conservation.¹⁰

Government Response and Strategic Gaps

In response to the drought, local authorities have focused on immediate relief measures, such as reducing the seeding area for the summer-spring season to mitigate economic losses¹¹. However, this approach lacks long-term strategic planning. Despite the perennial nature of drought in the region, sustainable plans to address the root causes and mitigate future impacts are conspicuously absent. Prioritizing water supply for domestic use and livestock has proven insufficient, as evidenced by ongoing agricultural and livestock losses.

⁷ <https://kinhtedothi.vn/el-nino-tiep-tuc-duy-tri-ninh-thuan-doi-dien-voi-han-han-nghiem-trong.html>

⁸ <https://thanhnien.vn/ninh-thuan-hon-49000-nguoi-thieu-nuoc-sach-sinh-hoat-185958394.htm>

⁹ <https://danviet.vn/nuoc-tu-cong-trinh-thuy-loi-hien-dai-nhat-viet-nam-di-den-dau-canh-dong-o-ninh-thuan-xanh-den-do-20240315150704116.htm>

¹⁰ <https://vov.vn/xa-hoi/du-an-ho-chua-nuoc-hon-1000-ty-dong-o-ninh-thuan-nhieu-lan-tre-hen-post1072207.vov>

¹¹ http://khuyennong.ninhthuan.gov.vn/Chitiec_Tin.aspx?ID=449

Proposed Long-Term Solutions

A more sustainable approach involves diversifying local income sources to reduce dependency on agriculture. Ninh Thuan is home to traditional craft villages specializing in pottery, brocade weaving, fish sauce production, seafood processing, fine arts, wine production, and dried fruit manufacturing. By promoting these alternative livelihoods, the local population can build resilience against drought-induced economic shocks.

Integrating nature-based solutions (NbS) into the region's strategy is crucial. NbS can enhance social, economic, and biodiversity benefits through practices like wetland restoration, aquifer recharge, and improved agricultural management to enhance soil water retention. Agroforestry and reforestation can further mitigate drought impacts by reducing soil evaporation and enhancing water retention.

Innovative Water Solutions

Addressing water scarcity also requires innovative solutions. For instance, a pilot project Water by Wind (WbW) using wind-driven energy for seawater desalination has been initiated in Ninh Thuan, producing 20 cubic meters of water per day¹². Although currently insufficient to meet the province's needs, scaling up such technologies could offer a viable long-term water supply solution.



Figure 3: Inauguration Ceremony of Water by Wind project in 2022¹³

Conclusion

As Ninh Thuan Province is suffering severe drought, the urgent need for comprehensive, sustainable strategies becomes evident. On the occasion of the upcoming Conference of the Parties (COP16) of the United Nations Convention to Combat Desertification (UNCCD) taking place in Riyadh, Saudi Arabia in December 2024, it is crucial to emphasize the importance of healthy land for ecosystem and biodiversity well-being. A multifaceted approach, incorporating economic diversification, nature-based solutions, and innovative water technologies, is essential to build resilience and secure a sustainable future for Ninh Thuan.

Disclaimer

The information provided in this blog post is for general informational purposes only. All views and opinions expressed are those of the author and should not be interpreted as an endorsement or official statement by the United Nations Convention to Combat Desertification (UNCCD).

¹² <https://www.evn.com.vn/d6/tknl-d/Ninh-Thuan-khanh-thanh-du-an-dung-nang-luong-tai-cao-de-khu-man-100-609-55671.aspx>

¹³ <https://nongnghiep.vn/nang-gio-ninh-thuan-bien-nuoc-man-thanh-nuoc-ngot-d317991.html>