

# DAWEI MYANMAR



## CITY DESCRIPTION

Dawei is the capital of the Tanintharyi Division in southern Myanmar. Located at the head of the Dawei river estuary and bordering the Andaman Sea, Dawei features an extreme tropical monsoon climate. Flooding is a major issue, along with risks associated with a coastal climate including coastal erosion, sea level rise and saline intrusion. Rubber and palm oil plantations, as well as mining activities, have led to environmental degradation in the region (flooding, reduced water quality). Dawei is a strategic transport and economic hub as part of the East-West Economic Corridor. Among the planned developments are the Dawei Special Economic Zone (DSEZ), a road and rail link to Kanchanaburi province in Thailand, and the Dawei deep-sea port linking the Indian Ocean to the Mekong Region. Regionalization is shaping urbanization processes in Dawei, and the city is expecting rapid population growth with 100,000 new jobs expected to be created by 2025 through the Dawei project. SEZ development and urbanization processes will place significant stress on existing resources, making the city and region more prone to climate hazards.



Dawei City, Photo Credit: Carli Melo

## UCRSEA

The Urban Climate Resilience in Southeast Asia Partnership (UCRSEA) is a five year-program led by the Thailand Environment Institute and the University of Toronto in collaboration with academics, researchers, civil society workers, government officials and students from the Mekong Region and Canada.

As Southeast Asia is one of the most rapidly urbanizing regions of the world with increasingly apparent threats from climate change, UCRSEA recognizes that cities in the region face changing risks and vulnerabilities. The program aims to advance the understanding of contemporary urbanization in Southeast Asian cities, build bodies of knowledge that will contribute to policy change, and provide spaces for informed public dialogue.

UCRSEA activities are concentrated in eight cities. The city briefs serve as an introduction to the UCRSEA focus cities and summary of our preliminary findings. Each of the eight cities was chosen because it was a secondary city with important regional connections facing challenges from both urbanization and climate change.

As the project progresses, UCRSEA will release subsequent versions of the city briefs that reflect our updated research findings and share our improved understanding of the implications and interactions of urbanization and climate change.

## URBANIZATION AND REGIONALIZATION

➡ Land in Dawei has extensive historical and ecological importance. Archeological findings suggest that the area was inhabited up to 4,000 years ago (around 2,000BC). Buddhist relics and ancient artifacts dating back to the 6th century (Pyu era) suggest that Dawei was home to an ancient civilization, which flourished from regional trade. Today, an estimated 85 percent per cent of local livelihoods rely on plantation. (Loewen, 2012).

➡ Dawei, a district in Tanintharyi Region in Myanmar, has a population of close to 500,000 people (Data 2016). The Dawei Township is the most urbanized in the Dawei District, with 63.8 percent of its population living in urban areas, which largely reflects the urban population living in Dawei city.

➡ The Foreign Investment Law (FOL) plays a key role in escalating the urbanization and regionalization of Dawei because of an allowance of 100% investment for foreigner-owned companies in Myanmar.

➡ The city of Dawei is considered removed from larger economic centre such as Yangon and Mandalay. Dawei lies within Myanmar's southernmost region, which borders Mon State to the North and Thailand to the East, on territory that connects the Malay Peninsula with mainland Asia. The city is connected to regional economic corridors.

➡ The Dawei project (DSEZ), a planned SEZ will be a key economic hub for regional economic integration amongst ASEAN countries. The DSEZ will be integral to the East-West Corridor, which supports the ASEAN transport network linking the DSEZ by road and rail to Kanchanaburi province. This road and rail link also connects to the Southern Economic Corridor.

➡ Given the scale and size of the DSEZ, it is expected that the city of Dawei will experience rapid population growth through the influx of economic opportunities stemming from infrastructure development and industrial production.

➡ The planned Dawei deep-sea port will accommodate over 250 million tonnes of cargo, the largest deep-sea port in Southeast Asia. This will be a major gateway linking the Indian Ocean to the Mekong Region, serving as an alternative trade route to the Malacca Straits.

➡ As these mega projects are developed and expend in the region, they impact the livelihoods of local people. Land grabbing and the forced the displacement of people is of particular concern. The relocation sites are not suitable for agricultural work or fishing, both of which were crucial aspects of Dawei residents' livelihoods.

## CLIMATE CHALLENGES

The climate of Dawei is characterized by three seasons: the monsoon season from June to September; the cold season from October-January; and the hot dry season from February to May. Rainfall is highly seasonal with 90% of the yearly precipitation occurring during monsoon season from May to September<sup>1</sup>.

**Table 4: Mean Monthly Rainfall (mm) and Rainy Days of the Dawei Station for (1971-2010)**

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Rain-fall	6.89	13.97	28.72	88.14	519.94	1140.9	1202.2	1312.18	781.56	309.88	49.53	5.33	5463.29
Rainy Days	0.6	0.9	3.2	5.8	18.6	26.2	28.5	27.6	24.9	15.2	2.9	0.6	154.9

Source: Department of Meteorology, Dawei Station

<sup>1</sup>Martin, Taylor and Saw Win. Vulnerability Assessment of Dawei, Tanintharyi Region, Myanmar. July 2016.

Climate data shows that Myanmar has experienced an upward trend in average and high temperatures. Projections suggest that the average temperature will increase by 1 to 4 degrees Celsius by the end of the century.

Rainfall is predicted to become increasingly erratic and shift between periods of heavy rainfall and drought. A respondent to UCRSEA's vulnerability assessment described Dawei's current climate as: "irregular rain, heavy rain, and no rain... the weather is very hot and drought... I notice [in] just three years [the] change, irregular raining, weather is hotter than previous and the environment is dry."

The city of Dawei is located on the banks of the Dawei River, which is prone to flooding in the monsoon season. The site of the DSEZ is exposed to coastal climate related hazards such as coastal erosion, sea level rise, and saline intrusion.

Today in Myanmar, Development Affairs Organizations (DAOs) are located at the township level and are responsible for municipal governance, local economic planning, and service provision including trash collection, the construction and maintenance of small roads and bridges, drainage, and urban water supplies (Arnold et al. 2015).

The Dawei Township administration's limited capacity to plan for the increased demand for urban land and services is resulting in uneven development.

## URBAN CLIMATE VULNERABILITY

The Dawei project highlights Myanmar's effort to connect one of Asia's poorest nation to a regional influx of global growth. The Dawei deep-sea port and Special Economic Zone (SEZ) are key elements in the new sub-regional infrastructure project. This industrial growth comes with a large number of changes in the city of Dawei.

The Dawei SEZ has the potential to increase the socioeconomic opportunities of Dawei communities, however, it may not be possible for all local actors to access those benefits. Local people might have a greater opportunity to earn a consistent income and get access to the appropriate basic needs than before the development of the SEZ. However, depending on the SEZ for their economic livelihood leaves people vulnerable to exploitation by unjust labor practices or poor enforcement of labor and pay regulations. Additionally, many vulnerable individuals and families who don't have enough capital to adapt to the rapid changes might be faced with many obstacles of social life such as equity of education, accessibility of health service and so on. The development of the SEZ may not address those social issues, and thus would not significantly improve the wellbeing of those individuals.



Dawei City, Photo Credit: Carli Melo



The development of infrastructure, such as transportation and water supply systems that address the accessibility of the remote areas, can have positive effects in enhancing the quality of life for local residents. However, this infrastructure and urban growth can also have negative effects on the agricultural lands surrounding the city. Construction and industrial activities from the SEZ can encroach on agricultural lands, leading to loss of property and displacement for local communities. Therefore, the continued development of the SEZ leaves local communities vulnerable to the loss of ability to support themselves through agriculture, and potential displacement from their homes with inadequate compensation by the large development companies. This is an understudied side of the SEZ development.

The ecological systems of the Dawei region are directly impacted by the development of both the deep sea port and SEZ. In the previous SEZ cases around Southeast Asia, establishing industrial sites tends to lead to conflict with local residents because the construction and activities of the industrial sites cause pollution with a long lasting impact on the local areas. The Dawei SEZ has already encountered some resistance from local residents who are uncertain about the benefits of the SEZ and want to know what impact the SEZ will have on their city, including the environmental impacts. If the project is have a positive effect on the lives of local communities, the needs of local stakeholders should be taken into account.

Future UCRSEA research activities in Dawei should focus on the impact of the SEZ on local communities, including both benefits and increased vulnerabilities. Additionally, research should be conducted to evaluate the effectiveness of local government in addressing the needs of local residents, and the how much access local communities have to decision-making institutions.



Figure 1 *Dawei SEZ strategic connectivity; A - B = Dawei connect to Kanchanaburi (Thailand), A - C = Dawei connect to Yunnan (China) through Shan State (Myanmar), A - D = Dawei connect to Tamil Nadu's capital city of Chennai (India) (Kruaechaipinit, 2014)*

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