URBAN SUSTAINABILITY REVIEW AND STRATEGY 2030

KALAW

Kalaw Urban Sustainability Review and Strategy 2030 June 2020

DISCLAMER

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FOREWORD DUHD

The urban population in Myanmar is growing faster than the country's population as a whole which put a large pressure on existing urban services and infrastructure. There is an urgent need for support to sustainable urban planning, development and management in Myanmar. The task of promoting more sustainable urban areas is shared between a number of stakeholders, where there is a need to strengthen Capacity institutionally, organizationally as well as by strengthening individual capacities.

The Department of Urban and Housing Development (DUHD) of the Ministry of Construction (MOC), is the responsible government agency for urban and housing sector development in Myanmar. During the last years, there has been a strong focus to develop new priority programmes to ensure the achievement of a sustainable urban future in Myanmar. These include the Million Houses Programme, the development of the National Urban Policy, a new Urban and Regional Development Planning Law, Housing Development Law, Guidelines for Urban–Rural Linkages and better connectivity and Guidelines for Mainstreaming of Climate Change into the development agenda.

As a response to the great needs to address the issue of urban development in Myanmar including the need to capacitate key functions in the urban sector, MOC established the Urban Research Development Institute (URDI) by the support of UN-Habitat. Based on the platform of URDI, the SymbioCity Capacity Building Programme has been implemented since 2017 through the collaboration between SKL International, DUHD and MOC. The 3-year program funded by Sida, has been successfully implemented in the cities of Dawei, Kalay and Kalaw, in the states/ regions of Tanintharyi, Sagaing and Shan, cities with different opportunities, potential and challenges.

The programme was specifically designed to support the Capacity enhancement aiming to build a Capacity of stakeholders at both national and local level, for better sustainable urban development with strong focus on social inclusion and participation. The programme has provided around 200 participants with hands-on "learning by doing" training experiences and initiated a cross disciplinary approach to urban planning and development that can function as 'good model for urban planning' for further spreading in Myanmar. The Town Planning process has been enriched by the SymbioCity Programme and its inclusive and sustainable approach to urban planning. Participants in the programme have had great achievements of understanding the SymbioCity Approach and acknowledge integrated spatial, environmental, socio-cultural, and economic development. Core group participants from each town and high level officials have had the great opportunity to study visits to projects in Sweden to learn about integrated spatial and institutional solutions including aspects of e.g. the Swedish Municipal system and administration, development of public spaces and green spaces, participatory processes, public housing, social inclusion, cultural heritage, urban agriculture, flood management, sustainable mobility and urban transformation.

On behalf of DUHD of MOC I would like to express my gratitude to the Swedish Government, Sida, SKL International, Experts from Malmö Municipality, Sigtuna Municipality, Umeå Municipality, Uppsala Municipality, Town of Stockholm, Yangon Heritage Trust, the Remote Sensing and GIS Research Center at Yangon Technological University, One Map Myanmar and all stakeholders who have been involved. We look forward to further strong cooperation and a sustainable and socio-economic development of cities in Myanmar.



AYE AYE MYINT Deputy Director General Department of Urban and Housing Development Ministry of Construction The Republic of Union of Myanmar

FOREWORD URDI

The Urban Research and Development Institute (URDI) was established as a response to the great need to address the issue of urban development in Myanmar, including the need to capacitate key functions in the urban sector. The long-term ambition of URDI is to become the main hub for research and Capacity building in the urban sector in Myanmar.

The SymbioCity Approach is an integrated and holistic approach to sustainable urban development, based on extensive experience in Sweden and developing countries. It considers different functions and systems in relation to one another, and involves all relevant stakeholders, in order to achieve synergies. Cities and towns include various systems and functions that are of crucial importance for socially, economically and ecologically sustainable urban development. Synergetic solutions that solve several problems at once are often more cost-effective and sustainable. The SymbioCity Capacity Building Programme has addressed critical Capacity and institutional gaps that currently constrain the Department for Urban and Housing Development (DUHD) and the Urban Research and Development Institute (URDI) from effectively managing growth.

Since the SymbioCity Capacity Building Programme encourage and support multidisciplinary cooperation among stakeholders and an integrated approach, it builds a mutual sharing of knowledge and experience, primarily at local government level. It has also served as a basis for dialogue and cooperation between stakeholders at not only local level but also regional and national institutions, town planners and trainees are now able to guide urban sustainability reviews at different levels, using a combined multidisciplinary and sector approach. the SymbioCity Capacity Building Programme includes study visit to Sweden for core members in each township. It is thematically oriented towards introducing the Swedish governing system and the municipal responsibility of planning sustainable and inclusive cities. The study visits included aspects of the Swedish Municipal system and administration, development of public spaces and green spaces, participatory processes, social inclusion, cultural heritage, urban agriculture, sustainable mobility and urban transformation.

In summary, the SymbioCity Capacity Building Programme has been an opportunity for us to learn about good international practices. The programme is considered a key success factor for integrated development of urban sustainability and is required at all levels. This program has had a strong impact at the national level and regional level urban practices in Myanmar, supporting cities and towns to plan practical and integrated system solutions for sustainable urban development.



DR. SABE PYU LWIN Deputy Director Urban Research and Development Institute (URDI) Department of Urban and Housing Development (DUHD) Ministry of Construction

FOREWORD KALAW TEAM

Building a modern developed city requires modern advanced technology, socio-economic development as well as high quality people-centred service delivery. Besides that, sustainable urban development planning methodology, a holistic approach to responsive urban development, integration of ecological, social- cultural and economic sustainability and participation of citizens and civil society are of high importance.

Kalaw Township was selected to be part of the "SymbioCity Capacity Building Programme" and the Kalaw participants received training during 4 weeks, 3 times in Kalaw and 1 time in Sweden. In the first training, we could set the vision for Kalaw, "By 2030 Kalaw is a unique, sustainable, clean and safe city for everyone, that attracts visitors for its heritage and culture and is known as a Pineland City."

Thanks to those trainings, the participants had a chance to explore the current situation in Kalaw, strengths, weaknesses, challenges and opportunities of the city, basis needs of the town and identify the solutions collectively. One of the important part of the methodology was group work/ group exercises which did help the government officers and local residents to get to know each other and work together for the development of Kalaw during and beyond the programme.

The training in Sweden gave the participants hands-on learning and experiences on how climate change is mitigated by conserving the environment and the forests. As our country is one of the most vulnerable countries to the climate change, it was an eye-opening experience for us to come to realise the importance of conserving forests and green areas and how urgent it was. Furthermore, we could study efficient and reliable public transport system, how bicycle lanes and sidewalks for pedestrian lanes were prioritized, and the public housing system of Sweden. Another value of this study trip was our real-world experience showing that people-centred plans including participation of local stakeholders were more likely to be successful.

This program gave us a great opportunity to gain international experience and learn about different practices for urban development, setting visions for cities, ways to deal with urban issues and challenges, and the SymbioCity approach to urban planning. These skills and knowledge will help us to plan and implement urban development in a sustainable way. If this kind of programme and training can be delivered on a continuous basis, it will be a great value for human resource development and urban development at the local level.

I would like to express our sincere appreciation to everyone who made efforts and contributions to organise this programme in Kalaw which brought us international knowledge and practices that we can apply in our work.



U KYAW SAN YU (PA/4640) Deputy Township Administrator Kalaw Township General Administration Department

EXECUTIVE SUMMARY

This document brings together the work conducted during the SymbioCity Capacity Building Programme and provides a knowledge base and strategy for future development of Kalaw. The programme focused on improved capacity for urban planning, urban design, urban development and urban management with broad participation of stakeholders from local, state/region and union level.

The multi-sectoral core team of the programme with representatives from local, regional and national authorities has been working together to jointly define the existing situation, aspirations and the way forward for a more inclusive and sustainable urban development.

The report identifies the current situation through sustainability challenges and opportunities, aspirations for the future through vision and objectives as well as the way forward through project proposal for the strategy period of 2030. The identified vision aims to create a sustainable development of Kalaw with specific focus on the balance between heritage and urban development, sustainable tourism development, linkages between Kalaw town and surrounding areas, greenery and resilience as well as improved social infrastructure and participation. The participants in the programme have worked extensively with different tools and methodologies for improved analysis of the needs and challenges in the town that would be met by the proposed development strategy.

Specific proposals have been developed for the thematic areas of urban-rural linkages, green/blue structure, social structure and co-creation, heritage and identity, sustainable mobility, tourism and local economic development.

1. BACKGROUND

The political and institutional changes in Myanmar in recent years has stimulated urbanization and the number of people now moving from rural to urban areas is growing rapidly. This increases the pressure on existing urban services, infrastructure and socio-economic aspects, as well as the institutional mechanism and planning capacity for sustainable urban development in the country. Many sectors of the urban environment already suffer from poor infrastructure and management inefficiencies, such as water supply, sanitation, drainage, wastewater and solid waste management. Myanmar is also vulnerable to natural disasters which calls for resilience measures in urban environments. In addition, conflict sensitive urban planning can contribute both to the democratic development as well as peacebuilding in the country. While capacity constraints will continue to impact the functioning of the local level, several examples from around the world suggest that greater political decentralisation leads to better governance outcomes in cities which is a strong reason to continue the capacity building and infrastructure investment support to local level. To address the urban challenge,

there is a need to develop solutions which will tackle the numerous urban problems in an integrated, sustainable and holistic approach.

SKL international manages the SymbioCity Approach 2.0 Programme, funded by Sida, lasting from December 2015 to December 2020. One component of the programme is the Capacity Building Programme in Myanmar. The Programme has been implemented in three townships in Myanmar – Dawei, Kalay, and Kalaw. In collaboration with the Urban Research and Development Institute (URDI) of the Ministry of Construction, the programme aims to build capacity towards sustainable and inclusive urban development.

This document presents the result of the programme in Kalaw and is a joint work between all stakeholders involved throughout the process. The capacity building activities of the programme in Kalaw were conducted during the period of 15th of October 2018 to 8th of November 2019.

1.1 What is an Urban Sustainability Review and Strategy?

An Urban Sustainability Review (USR) is both a process and a product. It is a process for jointly exploring urban areas from a holistic perspective; an inclusive way of selecting and describing key issues which the town needs to address in development strategies, and key assets and opportunities, which should be leveraged in development projects and actions. It provides a platform for open and transparent discussions and consultations on matters of local attention by several stakeholders, as well as relations to global policies such as the Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA). This report presents the findings and conclusions of the process. In addition, the report sets out the Strategy for a more sustainable future in Kalaw through a 20-years perspective while making use of existing assets. For specific information from each training session, see the workshop documentation documents.



Figure 1: The conceptual model of SymbioCity, integrating the perspectives of socio-cultural, environmental and economic sustainability through improved urban systems, developed institutions and spatial improvements.

1.2 The SymbioCity

The SymbioCity is a concept for sustainable urban development with emphasis on improving living conditions for citizens, through the involvement of various actors and disciplines. It integrates economic, environmental and sociocultural dimensions; it includes a gender perspective and promotes synergistic relations. It is a way of working with urban development and provides guidance and tools to support sustainable urban development processes.

The SymbioCity does not provide ready-made solutions to all urban challenges. Instead it offers a holistic, inclusive and integrated methodology for successfully working with sustainable urban development with broad stakeholder involvement and is a way of moving from ideas into action.

SymbioCity supports cities and urban areas in developing in a more sustainable and inclusive way and put people in the centre of development. To improve the health, safety, comfort and quality of life for the people who live there, e.g. to provide urban services like waste management, mobility and water more effectively. And to capture the economic and ecological potential that urbanisation brings while protecting the urban environment.

The approach works from visions and strategies, through integrated urban planning to urban improvements, innovative solutions and strengthened management of urban areas.

SDGs and NUA

Both the Sustainable Development Goals (SDGs) of Agenda 2030 and the New Urban Agenda (NUA) recognize the significance and potential of urbanization for a sustainable future by stressing the importance of a holistic, integrated and inclusive approach to urban development. The importance of local authorities in coordinating holistic planning and finding systemic urban solutions together with public, private and academic actors is thus crucial for the achievement of the SDGs. SymbioCity aims to support this development by providing tools that move from displaying what needs to be done to show how to move into action and achieve the goals, without compromising a strong foundation on local realities and pre-requisites. The core focus of the approach is to support implementation of SDG 11 Sustainable cities and communities: Make cities and human settlements inclusive, safe, resilient & sustainable. A pre-requisite in any urban planning process is to ensure establishment of strong local institutions that enables accountable, responsive and inclusive decision making processes through participation of stakeholders and partnerships with public, private and academic actors. SDG 16 Peace, justice and strong institutions and 17 Partnerships for the goals are therefore integral as institutional components in all SymbioCity projects. To acknowledge urban complexity, the procedure includes local assessments of urban thematic and perspectives including poverty reduction (SDG 1), gender equality (SDG 5), clean water and sanitation (SDG 6), affordable and clean energy (SDG 7), industry, innovation and infrastructure (SDG 9), reduced inequalities (SDG 10), responsible consumption and productions (SDG 12), climate action (SDG 13), life below water (SDG 14) and life on land (SDG 15).



Figure 2: The SymbioCity integrates several of the Sustainable Development Goals into the working process.

1.3 SymbioCity Myanmar

The SymbioCity Myanmar Capacity Building Programme in Myanmar targeted a critical mass of stakeholders at Union, State/Region and Township levels, building Capacity through trainings, workshops and exposure visits. The Capacity building activities were structured around existing challenges and opportunities, and provided hands-on experiences of different approaches to urban planning, development and management. In total, each township underwent four rounds of one-week-training including an exposure visit to Sweden. The initiative has been anchored within the Ministry of Construction (MoC), Myanmar. The MoC has developed a 5-year plan for urban Capacity building in Myanmar that takes its point of departure from the Urban and Regional Planning Law. Operationally, the programme was implemented with the Urban Research and Development (DUHD) has been developed as a response to the great need to address the issue of urban development in Myanmar, including the need to capacitate key functions in the urban sector. The work in each township has been strongly linked to the Town Planning process. Under the current administrative structure, the town plan is meant to be the document that guides the sustainable urban development of a town.

Project organisation

In Kalaw, a core team of 19 participants have been leading the work and participating throughout the whole Capacity Building Programme. The 4 training sessions have been led by international and national SymbioCity facilitators. Additional participants from civil society, academia, private sector or other relevant institution and experts have been engaged in different parts of the programme. During training session 1 and 2, 50-60 participants joined the training sessions to enable a broader approach and collaboration about the future development in Kalaw. The core team has continually engaged stakeholders through secondary data collection, field visits, participatory events, group discussions and interviews with various key informants. The core team was divided into specific thematic groups working with the development of thematic proposals. As the proposals are developed during the training sessions, deeper studies and strategy for implementation are needed.

In session 1, Daw Win Lae Lae Khine from Dawei core team and U Awi Cin Kim from Kalay core team joined the training as workshop facilitators to support the work of the participants, share their experiences and to gain additional coaching skills in the SymbioCity methodology.

During session 2, experts were invited to give guest lectures. Dr Kyaw Zaya Htun from Yangon Technical University provided a presentation and a live demonstration on GIS mapping, data analysis and drone photography. Daw Moe Moe Lwin and Mr. Rupert Mann from Yangon Heritage Trust provided presentations on heritage conservation, management and heritage assessment and led an exercise on heritage mapping.

A comprehensive heritage mapping was conducted during August to November 2019 with large involvement of various stakeholders and technical support from Yangon Heritage Trust. The process was mapping and photographing existing buildings in the town for further classification. GAD and TDC led the process in collaboration with ward authorities and residents. The inventory included 20 people, marking around 5000 buildings from all 11 wards.

A City Profile for Kalaw was added as an additional component of the SymbioCity programme during July 2019 to March 2020, see separate City Profile report. The City Profile was jointly led by the Department of Housing and Urban Development (DUHD) and General Administration Department (GAD), Town Development Committee (TDC) and other departments related to town planning & management in Kalaw with the support of SKL International. In total, around 50 people were involved throughout the implementation period. Methods used were Secondary Data Collection, Questionnaire-based survey, Land Use Mapping and Focus Group Discussions. The Kalaw City Profile provides knowledge and data as a basis for urban planning and development, specifically focusing on the experiences and perceptions of the residents

Core Team Kalaw

1.	U Kyaw Min Htike	Assistant Director	City Development Committee (Kalaw)
2.	U Win Naing	Assistant Director	Planning Department (Kalaw)
3.	Daw Kay Thwe Myo Myint	Assistant Director	Department of Urban and Housing
			Development (Shan State)
4.	Daw Nan Lawn Naung Naung	Assistant Director	Department of Urban and Housing
			Development (Naypyitaw)
5.	U Aung Nay Phyo	Assistant Director	Department of Urban and Housing
			Development (Naypyitaw)
6.	U Toe Toe Oo	Assistant Director	Department of Urban and Housing
			Development (Naypyitaw)
7.	U Kyaw San Yu	Staff Officer	General Administration Department (Kalaw)
8.	U Myint Zaw	Staff Officer	General Administration Department
			(Aung Ban)
9.	Daw Am Bi Ka	Staff Officer	High way Department (Kalaw)
10.	Daw Thri May	Assistant Engineer	Department of Urban and Housing
			Development (Shan State)
11.	U Zay Ya Win	Staff Officer	Department of Rural Road Development
			(Kalaw)
12.	U San Win	Assistant Engineer	City Development Committee (Kalaw)
13.	U Kyaw Swar	Staff Officer	Department of Rural Road Development
			(Kalaw)
14.	U Maung Maung Thant	Assistant Engineer	Department of Electric Power (Kalaw)
15.	U Nay Yu	Staff Officer	Forest Department (Kalaw)
16.	Daw Pan Ju Ju	Junior Executive Officer	Department of Urban and Housing
			Development (Shan State)
17.	U Thein Naing Min	Deputy Township Administrative Officer	Department of Agricultural Land
			Management and Statistic (Kalaw)
18.	U Ауе Ко Ко Куаw	Senior Assistant Engineer	Department of Urban and Housing
			Development (Naypyitaw)
19.	U Aung Ye Pyae	Founder	Ride Behind Kalaw
Fac	ilitating Tagm		
Гас			
1.	Daw Sabe Pyu Lwin	Deputy Director	URDI
2.	U Zaw Myo Oo	Staff Officer	URDI
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4.	Vishnu Prasad/	International Programme Coordinator	SKL International
	Shoko Sakuma		
5.	Khine Yin Htun/	National Programme Coordinator	SKL International
	Hsu Mon Kyaw		
6.	Björn Ekelund	SymbioCity Trainer	SKL International
7.	Daw Mya Mya Thet	Translator	SKL International

Methodology and Programme Setup in Kalaw

The work of the core team was conducted during the 4 training sessions with deeper studies and implementation of the methodology in between the sessions. The situation in the specific town has been the point of departure for the trainings, to open up for the possibility to work with specific ongoing development in Kalaw. Principles of sustainability, poverty reduction, gender equality, public participation and transparency/ accountability have been included aspects. The work builds on additional analysis and data collection for improved decision making and informed decisions. The following image shows the division of work and thematic aspects in each of the 4 training sessions.

Opening Ceremony TRAINING SESSION 1 17 – 19 October 2018	TRAINING SESSION 2 11-15 March 2019	TRAINING SESSION 3 Study trip to Sweden 7-15 June 2019	TRAINING SESSION 4 Closing ceremony 4-8 November 2019
 Theory: SymbioCity Process Sustainable development Urban governance Practical work: Challenges and opportunities Field visit Stakeholder analysis Vision and objectives Development scenarios Overall development proposals Strategy for implementation 	 Theory: Urbanisation and climate change GIS and data analysis Social sustainability and gender equality Heritage conservation, man agement and assessments Public Participation Urban planning and policy Economic sustainability Practical work: Revision of vision and objectives Institutional analysis and development GIS mapping VR-space analysis Heritage mapping Social sustainability analysis Urban systems analysis Walk through evaluations Integrated projects and policies 	Study visits in Stockholm and Umeå: Public space, Sustainable mobility, Urban Design, Social integration, Town District redevelopment, Eco- town, Urban agriculture, Heritage conservation, Blue–green strategy, Storm-water management, Girls development of public space, Public participation, Political leadership and strategic planning, Swedish Municipal Planning, Local democracy, Public housing, Waste management, Renewable energy. Transnational leaning exchange: Members from SymbioCity Tunisia and Myanmar programmes shared knowledge and experiences. Practical work: - Development scenarios thematic areas - Development proposal thematic areas - Integrated solutions for urban systems	 Theory: City profile and heritage mapping Poverty and social inclusion Impact assessments Economic sustainability and financial options Practical work: Socio-economic analysis Revision development proposals thematic areas Project list Solution matrix Impact assessment Implementation and maintenance strategy Financing options

Core team: Change management/deeper studies/use of tools and methodologies



Figure 3: Broad multi-stakeholder collaboration has been a key throughout the programme.



Figure 4: Heritage mapping was conducted during several in-between sessions with the aim of developing a comprehensive heritage list for Kalaw.



Figure 5: Participants from SymbioCity Myanmar and Tunisia during the transnational learning exchange session in Sweden.

The following tools have been used in each session:

S1 Toolbox

- Mapping areas of opportunity and challenge
- Local interpretation of sustainability - mindmap
- SWOT- analysis
- Key sustainability challenges and opportunities
- Stakeholder mapping
- Key objectives
- Vision statement
- Scenariomatrix and impact assessment of scenarios
- Future image (map)
- Backcasting

S2 Toolbox

- Links/delinks (actors and steering documents)
- Have/have not-grid analysis (social sustainability)
- Walk through evaluation
- Problem tree analysis
- Mapping plans and steering documents
- Change diagram (organisation, policy, projects)

S3 Toolbox

- Scenariomatrix for thematic proposals and impact evaluation of scenarios
- Future image/development proposal for thematic areas
- Integrated solutions for urban systems - mindmap

S4 Toolbox

- Socio-economic mapping
- Future image/development proposal for thematic areas
- List of projects and solutions (financial, institutional, physical, organisational)
- Impact checklist
- Matrix projects, mandate/ stakeholder
- Hindering forces
- Estimated costs and financial plan
- Integration of SymbioCity in future work

2. UNDERSTANDING KALAW

2.1 Spatial dimensions

International and national connections

Kalaw is located in Shan State, on the western edge of the Shan Plateau at an altitude of 1320 metres. Shan state borders to China to the north, Laos to the east, and Thailand to the south. The Shan capital city of Taungyi is located 70 km west of Kalaw and Yangon around 400 km away. It is connected to the rest of Myanmar by road, railway, and air transportation from Heho. The Heho airport is a gateway for the Southern part of Shan State, attracting lots of tourists, as well as a transit hub to other regions by air. From Heho, there are flights from Yangon, Mandalay, Nyaung U, Lashio, Keng Tong and Tachileik. There are ongoing plans to upgrade Heho airport to an international airport which will further increase the pressure on infrastructure and services in the region.

Kalaw was founded as a hill station and used to be a popular resort destination and educational centre during the colonial period. With its impressive nature, rich bio-diversity, good trekking possibilities, calm atmosphere, pleasant weather and unique architecture, the town still attracts both international and domestic visitors, receiving approximately 13, 000 tourists a year. Inle Lake, one of UNESCO's World Heritage protection sites, is located 75 km away from Kalaw and the region is quickly expanding in terms of tourism development. Kalaw has an ambitious vision for its future that focuses on making the tourist industry central to its economic growth.

Kalaw Township

The township of Kalaw consists of three towns and 26 village tracts. 36 % of the whole township population live in urban areas, which is higher than the national average (30.6 %). The three towns – Kalaw, Aung Pan, Heho – are formed by urban Wards. Heho town was established in 2018 and its main function is closely connected to Heho Airport. Aung Pan is home to one of the most productive agricultural areas in Myanmar and known as a transit hub for trading local agricultural products and cargos. While most of the administrative functions have been concentrated to Kalaw, the population and density are higher in Aung Pan.

Township	Urban/ Rural	Name	Number of Wards or Village tracts	Total Population	Total number of conventional households ¹
		Kalaw	11	17,222	4143
Kalaw	Urban	Heho	5	12,267	2865
		Aung Pan	12	30,459	6767
	Rural	Village Tract	26	105,736	23309

Figure 6: Population of Kalaw township (GAD 2019)



Figure 7: Map of Kalaw township.

Population and administrative structure of Kalaw town

Kalaw town consists of 11 urban wards. The total population of Kalaw town is 17274 (GAD 2020) with its growth rate of 110% during the last decade. Ward 11 had the most rapid increase of 131%, although its density is still low. Ward 1,2,5 have the highest population density, while Ward 3 and 10 where large parts of the land are military compound and golf course, have a lower density level. The administrative functions are concentrated the southern part in Ward 4 which used to be a city centre. Gradually, due to Kalaw market and main road, concentrations of people and other functions such as bank, commercial functions shifted to the northern part of Ward 4 and Ward 5.



Figure 9: Population density by Ward (Kalaw City Profile)



Figure 10: Population growth by Ward from 2009 to 2019 (Kalaw City Profile)

Land Use Pattern of Kalaw

A quarter of the town's land is used as residential use (25.3%) followed by green area (23.9%) and military area (20.5%). Most of service and institutional functions are concentrated between downtown and the military area.

Land Use	Area (acre)	Ratio
Residential	702.48	25.3%
Commercial	16.18	0.6%
Service	151.44	5.5%
Institutional	73.35	2.6%
Military	569.74	20.5%
Religious	125.81	4.5%
Green	662.32	23.8%
Water body	16.24	0.6%
Industry	0.16	0.0%
Transportation	4.54	0.2%
Poultry	0.19	0.0%
Utilities	15.68	0.6%
Road	439.23	15.8%
Total	2777.36	100%

Figure 11: List of land use code and its use in Kalaw



Figure 12: Land use map. (DUHD 2019)

2.2 Institutional dimensions

Township level

Similar to most secondary cities in Myanmar, the Kalaw township is administrated by the number of government departments which are mostly under a part of Union Ministries. There are number of committees at different levels which are in charge of oversight and coordination among departments². Township level offices provide local services and report to their Union ministers or state/region department. There are four department with cross-sectoral (sometimes overwrapped) roles which are: General Administration Department³ (GAD) and Township Development Committee⁴ (TDC), Department of Planning (DoP) and Department of Rural Development (DRD). These departments are involved in Township Management Committee to oversee the town management.

TDC administers the urban wards of the township and is responsible for urban service management such as water supply, electricity, drainage systems, solid waste management and disaster management. Furthermore, they oversee local economic development through the grant of business licences, operation and licensing of slaughterhouses and markets, apart from collecting taxes, fees, and fines. TDC has substantial powers to collect taxes and user charges from citizens. It functions with relative autonomy and is free to make budgetary decisions regarding their annual expenditure. They report to the Ministry of Development Affairs at the state/regional level and function almost entirely out of the purview of the central or federal government. On the other hand, most of other departments are dependent on state/regional, or union level for funding.

While TDC administer the urban wards of the township, village tracts, characterised by low density of population and agricultural land use, are administered by the Department of Rural Development. The General Administration Department (GAD), within the Ministry of the Office of the Union Government, forms the backbone of administration in Myanmar's townships. From administrators at the ward and village tract level to officers at the Union level, GAD's responsibilities range from tax collection to administration of land management to myriad registration and certification processes⁵.

Apart from the mentioned four cross sectoral departments, there are 10 sectoral departments⁶ which consists of 31 offices including services and functions under Shan state departments based in Taunggyi. Following list shows the existing offices in Kalaw. Some of these offices also engage in thematic committees to work cross sectoral way.

Departments	Government owned Offices, Services and Functions
General Administration Department (GAD) Township Development Committee (TDC) Department of Planning (DoPs) Department of Rural Development (DRD) Land Record Department (DALMs) Department of Agriculture Department of Livestock Forest Department Fire Service Department Electrical Power Supply Department Post and Telecommunication Department Revenue Department Township Education Department Department of Sport and Physical Education	Agricultural Bank/Office Myanmar Economic Bank Microfinance Office Myanmar Railway Immigration Office Township Hospital Power plant (outside of the town) Exchange Office (for Land Line – MoTC) Law Office Court Microfinance Office Township Hospital Police Station Cooperative Office Statistics Office Construction Office

Figure 13: List of department and offices in Kalaw

⁵ Ibid

² The Asia Foundation, State and Region Governments in Myanmar, 2018.

³ In some references, it is called township general administration offices (GAOs). However, the report uses GAD since it is more commonly used in the town. ⁴ TDC is also referred as Development Affairs Organisation (DAO). This report uses TDC as it is more common in the town.

⁶ The difference between department and office lies in its role and service. Departments usually both provide services, answer inquiries but their main role is to conduct project or deliver allocated tasks from their own side. On the other side, offices, services and functions are basically working on providing services upon requests by the citizens.

A key policy document for the planning and administration of the city is the Town Plan, prepared usually by the MoC. The process of creating a town plan can be divided into two significant components. One, the various departments at the municipal level in charge of functions such as land use, road construction, highways, or water supply create an annual plan that consists of both a list of projects that the department aims to undertake along with a proposed budgetary expenditure. The list of projects could include both new projects proposed at the township level and continuing projects from previous years.

In other words, each contingent activity at the municipal level entails the creation of its own plan. These plans are then sent along the relevant line ministry to the state/regional level where a decision is taken on its approval, modification, and financing. For instance, the state/regional government may have financing options that are not available to the municipal level including the ability to procure loans, attain grant funding, and propose partnerships with private entities. Once this draft budget has been approved by the relevant line ministry, it is sent to the state parliaments for approval. If approved at the State/Region, the proposals are then forwarded to the relevant line ministry at the Union level. The same process as in the state/region level is repeated before the draft plan and budget is sent to the Union Parliament for final approval. Plans, thus approved, are then overseen by the state/regional government.

The second process involves the creation of a more comprehensive town plan that brings together aspects under the jurisdiction of different line ministries/departments including land records, economic activity, planning and budget, and other infrastructure services. For the town of Kalaw, this process is currently headed by the MoC at the union level. A request to make a comprehensive town plan can begin from either the state/region or union level. The role of the township officials in the making of this process seems to be confined to providing assistance to the union officials and/or providing data and statistics. A draft plan may cover several dimensions of urban planning including transportation, economic activity, population, immigration, construction, and involves consultations with several stakeholders at line ministries at both state/regional and union levels. In other words, it combines several aspects of the individual line ministry plans described earlier. The draft comprehensive plan needs to be approved by the MoC at the union level before it is sent to the Union Parliament for a final stamp of approval. The drafting of the comprehensive town plan is expected to adhere to national legislation and guidelines including the national building code and the applicable planning laws.



Each activity requires the creation of its own toen plan at the municipal level. For example. water supply, roads and bridges, land records etc. The town plan contains a list of proposed activites and a proposed budget.

Figure 14: Institutions and planning process of Myanmar.

2.3 Socio-cultural dimensions of Kalaw

Social diversity

Ethnic diversity is one of the important assets in Kalaw. In Kalaw town and other villages in Kalaw, 35.7% are Danu, followed by Pa-O (25.9%), Taung Yoe (17.6%) and Burma (14.6%). Kalaw also has a significant population of Nepali Gurkhas and Indian Hindus, Sikhs and Muslims who were brought to Kalaw by the British to build the railway line. The fact that different ethnic groups and religions are co-existing peacefully in this town can be a good model for other cities in Myanmar.⁷

There is a strong presence and engagement of civil society in the Kalaw. One example of the engagement was the mobilized campaign by residents to preserve Kalaw Garden as it was proposed to be converted into residential housing area. The successful campaign to preserve the park stands a testimony to the city's commitment to preserving its natural and social spaces. Among various civil society groups, the organisations related to sustainable tourism and environment have increased. Kalaw has also attracted people from other parts of the country or from other countries, specifically within the tourism business or café and hotel business. Compared to other towns in Myanmar, Kalaw is a 'destination' area which attract people to buy the land which is also reflected in the comparatively higher land price.

Education

The literacy rate of population aged 15 and over in the township is 86.7 % which is higher than that of Shan State (64.6%) but lower than the Union average (89.5%). Among the urban population of Kalaw township, 91.0% attended at least primary school, including 34.2% who completed high school or higher education.⁸ Kalaw town has both primary, middle and high schools as well as two colonial missionary schools and a military training college. The closest University is located in Taunggyi.

Health

For Kalaw township, the infant and under 5 years' mortality rates are 49 per 1000 live births which is much lower than those in Union average (62) and Shan State (56) (Census 2014). Kalaw has one government hospital and a couple of small private clinics. international and national NGOs are implementing health related program ranging from reproductive health, HIV/AIDS care to Malaria programs (MIMU 2020⁹). Drug use and addiction is perceived as popular health related concern in Kalaw town. Some addicted users are often staying around Kalaw main park after the evening. It is also informally accessible by the tourists. The Taunggyi region is popular for drug transaction and enables people to access to the drugs affordably. GAD plans to implement drug elimination project under One State and One Township Project by conducting survey and awareness trainings both in urban and rural areas.

Gender

There are slightly higher female population in both Kalaw town level and township level, being 52.3% and 50.6% respectively (GAD 2019). In terms of school attendance ratio in the township level, the attendance ratio is slightly higher in females between the age of 14 and 21, however, when we look at the population aged 25 and above by highest level or education completed by sex, 27.5% of female population have never attended, whereas the level for male populations is 16.7%. The gap was particularly seen in middle to high school grade, Diploma, Post-graduate and Vocational training. This gap indicates that more needs to be done in terms of improving educational attainment outcomes for women in the region.

The labour force participation rate (Kalaw Township Report 2017). The labour force participation rate of female is 70.8 % which is much lower than that of male of 90.9%. The unemployment rate is not significantly different between male (1.5%) and female (1.6%), however, the rate for female aged 15-24 is 3.7 %. This indicates need for increased job opportunities for women and specifically for younger groups.

⁷ General Administration Department Report. (2019). Kalaw Township.

⁸ Department of Population, 2014, The 2014 Myanmar Population and Housing Census

⁹ http://themimu.info/sites/themimu.info/files/documents/MIMU_BaselineData_Health_Countrywide_27Feb2019.zip

Heritage Conservation and Management

Kalaw is rich in both architectural, social, historic and natural heritage with its high degree of colonial-style architecture, cultural diversity, colonial function and surrounding landscape. Heritage is seen as an important aspect of the city's identity and is also found as a strong opportunity for tourism with several hotels and communication tools, using the 'colonial' legacy into their design, or walking routes between heritage buildings. Unfortunately, several important sites have become dilapidated due to neglect and lack of management and rampant construction activity, particularly high-rise buildings impacting view lines and the larger aesthetic environment of the town. Even in the past few years, urban development in Kalaw has rapidly progressed. The colonial legacy has left a deep imprint of the town's development and most often heritage has been associated with architectural styles and historic value. However, the cultural diversity of Kalaw is also visible from buildings and economic activities in the town, having different types of religious buildings and restaurants run by different communities.

There is a strong expressed concern that continuous construction activity, particularly high-rise buildings will have a negative impact on the town. Several local actors have been trying to find a way to conserve and promote heritage from planning perspective, such as list creation, guidelines and zone restrictions for new development. Some local



Figure 15: Kalaw Heritage Map. (iDiscover, 2019)

attempts were supported by knowledge from other cities such as Pyin Oo Lwin, national NGO and international development partners. To better manage the trade-off between heritage conservation, on one side, and growth and development, on the other, there is an urgent need for local policy and legislative options as well as design guidelines for heritage conservation and regulation of the new development.

Public Space

There is only one large park in Kalaw, the Kalaw Garden in Ward 4. Since the town is surrounded by a rich natural landscape, forest and mountains, people often use the nature around Kalaw for recreation. Religious places are also used for recreation and social activities. From focus group discussions, participants shared that the frequency of use of public spaces is dependent on the proximity, traffic situation and the physical structure of the place itself. Sports equipment and playground for children was raised as desired elements in public spaces. In some parts of the town, kids play in spaces which are supposed to be for other purposes such as roads.



Figure 16. Children playing on the public road.



Figure 17. Kalaw Garden, the public park of Kalaw.

Overall, people perceive most places in Kalaw as safe. Specific places pointed out as more unsafe are Kalaw Garden, Paloung Informal Settlements, Main Market, Railroad, Cow Slaughter Place in Ward 6, Outside of Tharyargone quarter and the Basic Education Primary School BEPS (5). Darkness, activities such as drug trafficking, drunk people, absence of people were raised as reasons for feeling unsafe.

2.4 Economic dimensions of Kalaw

Industrial development

According to data from the Department of Planning (DoP), Rental and other services (41.5%). Tourism related business is included in this category. This is followed by Social and Management (16.8%), Construction (16.4%) and Industries (5.2%). When look at township level data, construction is the highest (21.3%) followed by manufacturing industry which process raw materials and manufacture goods in factories (21.0%) and trading (13.0%). The GDP per capita of Kalaw Township in 2018-2019 is 1,090,812, which is almost a half of national average GDP per capita. This number is possibly caused by the main economic focus on agriculture along with a high rural population (63.8%) of the total population. Per capital GDP of Kalaw town is estimated as 1,999,976 kyat. (PD 2020)

Tourism

In town level, tourism forms the keystone of Kalaw's economy and it is expected to attract more investment and tourists into the town. At the moment, Kalaw receives around 13,000 tourists a year which is 0.4 % of all tourists in Myanmar. The target is to increase this share to 2.7% by 2027 and expecting revenue out of this to be approximately 6 million USD per year. There are currently 755 hotel rooms in the town, with about 33 days of full occupancy each year. Local tourism industry operators aim to increase the collaboration to increase the attractiveness through forest conservation, heritage conservation, height and traffic controls. One of the most popular activities in Kalaw among tourists is trekking. Trekking started 1994-95 and international tourists often combined with a visit in Paloung village for traditional architecture and lifestyle as well as Inle Lake. Ecotourism, organic farming and community-based tourism have increased during the last years in Kalaw. There are cross sectoral activities to promote tourism by the civil society-based tourism organisations or tour guides, sometimes with the support of foreign donors. Clean city efforts have been done by the local departments, Kalaw tourism organisations and residents who worked on reducing burning of waste and improving waste collection facilities. In 2018, Kalaw received the ASEAN Clean Tourist City Standard award.

Several interviews were conducted to hotel owners and trekking guides. The common opinion was that the tourism sector should work more together. In relation to urban service management, unstable electricity, water shortage and smell from drainage are main challenges for hotel owners. Public facilities for tourists could be improved including the creation of open, public spaces, public transportation, bicycle lanes, pedestrian access and improved information and signs.

Commercial Activities

Kalaw Myoma Market is the largest market in Kalaw and located in downtown. The market has over 100 stands and is formed by squared shape of 2 storied continuous shop buildings, from colonial time. Originally, the space was planned to be used by each category of goods, however in the reality, things are mixed. The first floor is used for office. The city authorities have had long standing plans to upgrade the Kalaw main market. Kalaw market currently suffers, as identified through interviews with vendors, a number of problem including: pick pockets and security, unbalanced opportunity in different locations, unorganized display lack of organisation, unclean environment, sanitation, waste management, maintenance and conservation, improvement of roof and ventilation, and lack of upgraded services for both vendors and customers. For instance, the market is scantily protected from the heavy rains that Kalaw is used to and often causes substantial damage to the wares of the vendors. Recommendations for upgradation by the vendors:

- Redesign layout based on category of the product.
- Secure enough space for cars for logistics.
- Improve roof to prevent water to flow inside the market, improve air circulation and lightness.

Kalaw five days' market is held between Myoma Market and Kalaw Creek. It is taking place every five days and is a popular shopping destination, as well as a link between agriculture and commerce. Sellers are coming from nearby villages. Temporary stalls are set up on mats and tent structures. The sellers just bring product and mats, sometimes with temporary tent structure for their own shop.



Figure 18: Current plan of Kalaw Myoma Market.



Figure 19. Overlooking main corridor of Kalaw Market from Main Road.

Poverty

Shan state has the second highest number of poor inhabitants in Myanmar, after Ayeyarwady Region, however the poverty density is one of the lowest. The high incidence of poverty rate is linked to the situation in the Hill and Mountain zone of the country, which shows the challenges of remote and mountainous terrain. The poverty gap is reaching the level of 6,8 compared to the union average of 5,2 (2,3 in urban areas)¹⁰. Kalaw is, compared to other cities in Shan state, known as a popular area with better access and business opportunities although land prices are higher than other parts of the region. Still, there are some informal settlements and ethnic minority groups who have limited access to the different types of public services, land, housing and information.

Town officials in Kalaw created a socio-economic map showing the differences in income (degrees of wealth and/ or poverty). The mapping aim influence location of development projects to prioritise areas and communities that are identified to be in poverty. Poor communities were identified to mainly live in the edge of the town in Ward 1,2,6,11. Well-off classes are more concentrated in the central old parts such as Ward 4 and 5. The area near military compounds were comparatively categorized as middle class. No group mentioned poor or lower middle in the central area, although these classes were also marked around the railway near central part by some groups.

Informal areas are apart from forest squatters, situated along the railway and in the mountain area. Most of the dwellers are recognized as citizens of Myanmar, have national registration card and have access to public facilities (school, hospital, transportation). Electricity or water are often taken through informal connections to the existing infrastructure and grid. If living outside of municipal coverage zones which are not on the GAD's registration they are illegible to get access to municipal services.

Housing

Residential areas are expanding particularly in the edge of Ward 1,9, (6,8,11). Due to increasing demands and change from the land related regulations, some forests around the town boundary were converted into residential areas (Forest Dept., 2020).

According to City Profile, single family house is the most popular type of accommodation (82%) and only 6% of respondents were renting which is much lower than national average in urban areas (20.3 %) (Census 2014). Brick is the most common material (71.7%) which is much higher than national average in urban areas (34.1%).

¹⁰ https://www.undp.org/content/dam/myanmar/docs/Publications/PovRedu/undp-mm-mlcs-poverty-report.pdf



Figure 20. Example of new types of villa housing complex, Ward 7.



Figure 21. Construction of mid-rise building near downtown, Ward 4.

In the recent years, the number of mid-rise buildings have been increasing due to increased demand for housing and increased land prices in both urban and peri-urban regions of Kalaw. Mid-rise buildings are specifically located in the downtown area. In the hilly part, some private estate companies have developed villa complexes, marketing the view and clean air of Kalaw.

2.5 Environmental dimensions of Kalaw

Topography and biodiversity

The location of Kalaw, at the sea level of 1,310 meters and in hilly forests generates a cool climate. Average temperature is 19 degrees Celsius and rainfall is 68 percent less than in Yangon. The area is also well-known for its bio-diversity. There are over 240 bird species in Kalaw which are rare to be found in other parts of the world. The rich green nature around Kalaw and its topography have been a great asset for long time. It used to attract British rulers and today, both national and international tourists. Viewpoints in the town provides panoramic views of the Inle plains and the surrounding Shan hills.

However, deforestation and encroachment of forest land around Kalaw is a pressing concern. Illegal logging and squatters have been perceived as main reasons for deforestation. In order to meet the increasing population and demand of land, the Forest Department converted more than 1000 acres of land to residential area in the outskirts of the town. The average temperature has been increasing in recent years and the town administration are replanting specifically bignoniaceous trees, cherry trees and pine trees to regulate the temperature. Simultaneously, the state aims to implement stringent regulations on the type and grade of trees that can be cut. Social and community forestry plans are also being implemented.

Pine trees is one of the main features of Kalaw. There are two types of pine trees, indigenous species and species which was introduced and planted during British Rule. However, the number of pine trees are decreasing. Several factors are pushing this situation such as illegal logging activity, squatting in the forest, forest fires,

	Rainfall		Temp	erature
Year	Days of Rain	Total Rainfall (mm)	Highest (°C)	Lowest (°C)
2010	78	34.13	34	4.5
2011	125	56.97	29.4	4.9
2012	88	35.79	32.3	4.4
2013	70	39.36	33.5	4.4
2014	83	39.72	32.4	3.8
2015	83	32.69	31.6	4.8
2016	82	43.66	34.3	4.6
2017	100	55.46	37	1.6
2018	76	27.81	33.8	4

Figure 22. Weather condition of Kalaw (2010-2018)

extension of planting, farming and extracting of oil. Some people claim the oil production as a necessity for economic development to provide more business opportunities. Pine trees are replanted every year. In 2018-2019, pine trees of 196 acres were planted.

While Kalaw has abundant green cover in the periphery, actually the central areas devoid of trees, especially in the public areas.

Natural Disasters

Compared to other parts of Myanmar, perceived risks and experiences of natural disaster is much lower in Kalaw town. The lower parts of the town around Kalaw Creek has higher risk and experiences of flooding. The water usually comes up to 3 feet. Heavy flooding which cause over 6 feet water rise can happen every 10 years. Flood plain around the creek also covers the location of the five-day market which posed a persistent threat to both the local economy and the citizens. Waste pollution of creeks and waterbodies is an additional reason for flooding.

Number of Recorded Natural Disasters in Kalaw Township (2009 - 2019, DDM)



Figure 23. Number of natural disasters in Kalaw Township 2009-2019. (DDM)



Figure 24. Photo records of the heavy flooding in 2002 in Ward 4 (GAD)

Figure 25 Flooding from rain water, Ward 2, October 2019.

Water

Surrounded by water ponds and facilities, the town rarely has experienced critical water shortage issues compare to other villages and cities in Southern Shan State. The residents use multiple water sources and it differs among areas. As of 2020, TDC provides water to 1772 households, which is 42,7% of its population (2020, TDC). These are provided by four water sources around the town. The main reservoir on the south west of the town is the primary source and was originally built by the British. Although Kalaw enjoys rich natural water sources, the excessive ground water extraction and depletion can be a serious concern, particularly with the expansion of new commercial and tourism development.



Figure 26: The main reservoir built in British colonial period.

Drainage

The drainage system in Kalaw is maintained by TDC. In some parts, the topography is used for flow of water. According to City Profile, 25% of the respondent's express dissatisfaction of the drainage system. Respondents in Ward 4, 5 and 7 express lower satisfaction rates. The main reasons for lack of satisfaction are: malfunction, blockage by waste/physical structure, absence of drainage system. Some open drains are clogged with waste. Drainage and water supply lines merge in some areas and can lead to contamination of municipal water in the future. The current drainage system lacks capacity for heavy rains.

Waste

The administration in Kalaw has put a lot of emphasis to make the town cleaner during the last years. Receiving the ASEAN Clean Tourism City Standard award in 2018 provided waste collection trucks to the township, which contributed to reducing the amount of burnt waste at individual household level. The township also implemented a random disposal free zone as part of the One State-One Township Project. Waste collection is managed by TDC without any private sector's involvement. According to TDC, 89% of the total generated waste in the city is collected and put on the landfill located in Ward 6. Still, some informal dumping sites are observed in the town which have created problems with flow and contaminated water in the creek. Need for organised waste collection is expressed



Figure 27: Instalment of waste bins near Kalaw Main Market as a part of the One State One Township project (February 2020).

around the market area as well as recycling and separation of waste. A few tourism operators started to put colour coded bins to practice and promote waste segregation and inform the public about the environmental and health hazards of non-biodegradability plastic.

Mobility and traffic

Motorbike is the easiest way to go around in Kalaw due to its hilly landscape and narrow roads in some parts of the city. According to the City Profile, motorbike was the most popular mode of transport (62%) followed by walking (28%) and private car (4.8%). Pedestrian lanes and access is limited, especially in areas with high density including market areas, highways and tourist spots. There is absence of pedestrian lanes outside of the city centre and improved access is needed particularly for elderly, disabled and young children. Bicycles are popular among tourists. There is need for more services to promote non-motorised forms of transport. Most of the road do not have proper road signs, public measures and proper traffic management system leading to congestion and accidents.

The connections to surrounding small villages are not established. In order to facilitate the movement of goods and people, Department of Rural Roads plans to connect all the villages by at least by one road under implementation of the One Village One Road Policy planned for 2030.

A traffic analysis was conducted, counting of the number of pedestrians, bicyclists, motorbikes, cars, commercial vehicles etc. Traffic counting was done at two junctions; clock tower and Meiktila-Taungyi Road, North-West Corner of Kalaw Market. The data collected was analysed and used to guide proposals for redesigning of street sections and mobility solutions.



Figure 29: Motorbikes are popular mode of transport. Parking often creates congestion, affects drivers and pedestrians.



Mobility Analysis – Collected Data (Average from two days)

Figure 28: Record of mode of transportation at two selected junctions

3. CHALLENGES AND OPPORTUNITIES FOR KALAW

3.1 Key sustainability issues

The participants of Kalaw has developed a triad of key sustainability issues, describing what sustainability means in a local Kalaw context. This description is defined in accordance to the three core topics of sustainable development: Social sustainability, Economic sustainability and Environmental sustainability. The definition of Sustainability gives the direction on what to focus on for future development but also a local definition of a local interpretation of the otherwise too widely described topic, thus making it both contextual and engaging.

• SOCIAL SUSTAINABILITY

Social infrastructure and facilities, public space, identity, heritage, health and culture.

ECONOMIC SUSTAINABILITY

Eco-/community based tourism, local economic development, agricultural development, housing, market upgrade.

ENVIRONMENTAL SUSTAINABILITY

Natural preservation, waste management and recycling, flood prevention.

3.2 Key challenges and assets

As a basis for the development of the vision and strategy for Kalaw 2030, challenges and assets were identified.

Strength, weakness, opportunity and threats

The table below shows an integrated SWOT-analysis of Kalaw town by a large group of stakeholders, the table is divided in thematic headings.

	Strengths	Weakness	Opportunity	Threats
Administration and Politics	 Low numbers of crimes Collaboration between stakeholders Strong local MP 	 No justice Weak rule of law Power abuse Controversial land ownership Unstable politics Absence of appropriate laws or regulations 	 Cross sectoral committees One State One Township Project 	 Lack of planning in natural resource management Delay in government process Lack of transparency Absence and unclarity of construction laws and regulations
Town management	• A gate to Shan state	 Limited information about informal settlements Necessity to manage population growth Lack of urban planning and management skills Limited training opportunities Expensive land prices 	• A model city	 Rapid informal urban development Lack of availability of land due to high prices Legal enforcement

	Strengths	Weakness	Opportunity	Threats
Heritage	 Heritage buildings Heritage areas and landscape Religious buildings Unique culture, costume and language 	 Lack of maintenance of historical buildings Lack of spaces for traditional festivals 	 Potential to promote historical buildings Promote the lighting festivals of Kalaw 	 Construction of High- rise buildings Unfavourable buildings and development against heritage and aesthetics of Kalaw Damage of heritage buildings Illegal transactions of antiques and heritage articles
Social inclusion and culture	 Social cohesion People work and live together peacefully Knitted community Collaborations and partner-initiatives Cooperative awareness Strong engagement of civil society Cohesive environment Diverse ethnic groups Strong traditions 	 Lack of consideration of grass roots in urban development processes Necessity to conserve cultural diversity, small ethnic groups 	 Possibility to give space for the people who live in informal areas Sharing of knowledge between different groups and organisations Community initiatives 	• Extinction of languages of minority ethnic groups
Environment	 Green environment Pleasant weather Beautiful nature Location as a hill station Fresh air View points Unique bird species Rich nature makes people understand the value of nature Pine hills and mountains 	 Flooding in monsoon season Lack of expertise knowledge Environmental degradation Deforestation Limited organisations working on environment Extraction of oil from pine trees Forest squatters 	 Eco-tourism Rich green space Bio-diversity Potential to attract more tourists like Pyin Oo Lwin Cleaning the town Natural resources 	 More priority on business than environment Lack of awareness session in school about environment Climate change due to deforestation Nature can be threatened because of population increase Limited law enforcement and awareness for a clean environment New development and town extension Illegal logging of the forest Climate change People ignoring environmental consequences of development
Economy and employment	 Economic potential Low living cost 	 Lack of skills/ knowledge Unstable investments Difficulty to get permission to start local businesses Lack of space for street vendors Lack of creativity in production Lack of capital and technology 	 Raise profits by selling local products Make more profit from tourism Raise income by setting up night market Young generation labour force Job opportunities for local people International technical and financial assistance Regional hub 	 Weak development of local economy Lack of attention from investors Challenging location for trade Financial inflation Factories in villages

	Strengths	Weakness	Opportunity	Threats
Health		 Perilous drug use among youth Necessity for more doctors Insufficient equipment in hospitals 		
Agriculture	 Fertile land and soil Organic farms Wine production from apples Famous oranges, avocado, tea trees Fresh fruits for the whole year 	 Lack of knowledge in farming Necessity to set up a new market Frequency of five days market is limited 	 Increased agricultural production Five days' market Better package design Potential to make minifarms in the villages Upgradation of market 	 Possibility to distribute local agricultural products Lack of education about the use of fertilizer
Tourism	 Unique values like weather, heritage, nature Income generation from tourism One of core industries Many outdoor trails Good communication and marketing Cheap to visit Trekking area Good connectivity 	 Weak cooperation with small ethnic groups Visitors stay short term Lack of creative tour programs for visitors Lack of creativity in producing products Poor quality of products No nightlife activities Weak in township tourism management Lack of skilled people in tourism field Poor hygiene at restaurants Need museum 	 Eco-tourism Community-based tourism Upgrading activities and tourist attractions Diverse types of tourism Hotel investors Many potential attractions Nature based tourism Adventure tours Can attract both local and international visitors Railway used for tourism tours 	 High-rise buildings Necessity to develop in a formal way with good investments Possible drop in the interest of tourists if Nyaung Shwe cannot develop in a sustainable way Drug dealing business with tourist Negative news about the country's political situation affect number of visitors If there are more tourist, child abuse case can happen more often More pollution and waste with increased tourism Rapid construction of high rise buildings that damages heritage can lead less interest from tourists
Education		 Lack of craft making training in school Lack of technical knowledge Lack of vocational training institute Local language barriers Lack of technology Limited learning opportunities for small ethnic groups Lack of knowledge and educational possibilities in village areas despite higher population 	• Increased knowledge and skills	• Lack of public awareness
Public Space	• Existence of rich forest	 No space for social activities Lack of street lights 	 Trees and greenery can improve walkability in Kalaw 	• Street dogs

	Strengths	Weakness	Opportunity	Threats
Mobility/Road condition	 Good accessibility Good connectivity Proximity to the airport 	 Poor road condition in some parts Absence of traffic lights Unsafe roads Car parking on the high way Not safe for pedestrians Necessity to upgrade the trains Lack of easy and accessible transportation Insufficient spaces for sidewalk Not safe for walking Flight connectivity Bus stop (Station) Low public transport No cycling path 	 Space to plant trees along the roads and improve access for different modes of transport Accessible Railway Upgradation of Heho airport 	
Infrastructure (Waste, Water, Drainage)	• ASEAN Clean city award	 No space for sewage system Lack of public electricity for visitors Poor waste management Increased waste accumulation Bad water flow Informal dumping Difficult to get water in the hills Water shortage in summer Necessity to sustain water source Poor drainage system No town drainage system plan 	 Good water source Develop wastewater management 	 More development creates waste problems Water shortage Monsoon flooding

Mapped opportunities and challenges

Specific areas of opportunities:

- Green areas in Kalaw city, specifically Kalaw Garden and viewpoints that serve as tourist attractions
- A particular view point that provides panoramic views of the Inle plains and the surrounding Shan hills
- The British built reservoir in Kalaw which serves as the primary source of water for the city

Specific areas of challenges:

- The Kalaw Golf Course
- Kalaw cemetery
- Areas of dense urban development in the city core
- One location in Aung Pan where heavy trucks that transport agricultural products are parked
- Waste dumping sites in Aung Pan where a large quantity of agricultural waste is dumped
- The Kalaw Market was perceived to be old, dysfunctional, and inadequate to meet the growing needs of the city
- Areas that are prone to flooding and landslides in the city, especially around the Kalaw creek



Figure 29: Mapped opportunities (green) and challenges (red) in Kalaw town and region.

Social sustainability and Gender equality

Specific analysis was done for social inclusion and gender.

Problems

- Gambling
- Drug use
- Maid work of young girls
- Pub/bear station
- Crime
- Discrimination
- Exploitation of workers
- Child abuse
- Violence against women

Assets

- Women police 24 hours' clinic centre
- Spa
 - Libraries • Sport clubs
- Gender mainstreaming
- Single mother protection
- Behaviour change to respect women
- Safe park
- Group to protect women's rights
- Female leaders in society • Women in business industry

Avoid

- KTV
- Night clubs
- Human trafficking
- Violence against women
- Prostitution
- Harassment
- Rapists
- Extremist groups
- Casino
- Illegal massage
- Using indecently dressed women • to attract customers

To strive for

- Sport clubs for women
- Women fitness centre
- Shopping centre
- Cultural training Male nurses
- Medical specialist Cinema
- Community centre • Vocational training for women
- Free craft art training
- Street lights
- **Bicycle** lanes
- Safe playgrounds
- More safe public spaces and gardens

- Easy access to any places in town
- Safe walkways
- Public transportation (female drivers)
- Good transport for schools
- Nursery school for government staff children • Day care centre for offices
- Appoint day care staff within departments
- Increased salaries for women
- Business support to women
- Cooperation between women and men
- Women association
- Laws to protect women and young girls
- Law enforcement to protect women's rights
- Law enforcements against rape

Problem	Cause	Effect
Declining tourism	 Hostel/ Information Center/ lack of public transport Weak information system and tourism policies Lack of conservation of traditional and culture Need more public services Weak health care system Political and ethnical conflicts in the country Could not amend tourism regulations and policies Unstable political situation Huge amount of service fee No good services and facilities for visitors 	 Economic activity has decreased leading to lower income Some cultural norms can extinct Job opportunity become less and unemployment rate soars Less investments
Deforestation	 Informal settlement encroaching in forest areas Logging trees (illegally) Weak law enforcement and violate regulations More furniture production Cutting for fuel and extraction of oil from pine trees Forest fires Extension of farming Out of date planting system Extraction of natural resources City expansion and construction of roads Lack of public awareness 	 Climate change Extinction of biodiversity Ecological change and deterioration of eco-system Flooding and landslides Impact on tourism and declined economy Difficult to access clean water Air pollution Public health problems
Water shortage and distribution	 Not enough ground water Sub-standard distribution system Not enough water collection points Hotels consumes more water Insufficient budget Deforestation Increasing population pressure 	 Health problems Less income for TDC Water shortage in different parts of the town Less green spaces Not enough water for landscaping or agriculture Increased prices for goods
Lack of bus station	 Not having direct regional bus station from Kalaw Problem with land Disadvantage of not following vehicle regulations 	 Cause of accidents Time constraints Congestion Parking problems
Building density	 Increased land prices Increased population Public attention to Kalaw No rule and regulation for high rise buildings Lack of knowledge of heritage conservation 	 No having standard quality roads Do not have fresh air Increase modern design buildings Difficult to access Deforestation Lack of green space Increased demand of electricity Damages of landscaping Loss of natural and building heritage
Flooding	 Waste from informal settlements going into the creek Littering and waste Lack of awareness Siltation due to deforestation Irregular water flow Heavy rains Having big trees inside of the creek Bad drainage system 	 Health problems Environmental degradation Problems with access Impact on socio-economic situation
Road accidents	 No road safety Lack of organisation around the market Weak law enforcement Narrow sidewalks and low walkability Weak adaptation to traffic rules Small spaces for car parking 	 Lack of safety Reduced number of visitors Traffic congestion Air pollution / noise pollution Accidents Increased car and motorcycle usage
Increased drugs and alcohol addiction	 Lack of enforcement Lack of recreational program 	 Increasing crime rate Decreasing human resources Young people moving to other place for education because of lack of safety Increased crime rate
Health support equipment	• Budget	 Major loss of health and lives

4. STRATEGY FOR KALAW

4.1 Vision and objectives

The city has identified the following key objectives and vision for its sustainable future:

"By 2030 Kalaw is a unique, sustainable, clean and safe city for everyone, that attracts visitors for its heritage and culture and is known as a Pineland City."

Objective 1	By 2030, Kalaw is able to expand urban areas without compromising natural resources and the character of the Pine forests, while at the same time agricultural production is improved.
Objective 2	By 2030, Kalaw is a sustainable, resilient city with good connectivity locally and nationally and integrates new development with well-preserved cultural heritage.
Objective 3	Kalaw has proper educational and vocational institutions according to international standards, as a way of providing knowledge and job opportunities for all by 2030
Objective 4	By 2030, Kalaw has become an attractive city both for its citizens as well as tourists, with a rich natural environment and culture that is accessible.
Objective 5	By 2030, both social and legislative measurements have been taken to reduce crime and increase safety in public space.
Objective 6	By 2030, Kalaw is a pleasant city with well-functioning public spaces and playgrounds and a high-quality healthcare system.

4.2 Prioritised development for Kalaw 2030

The overall strategy and proposal for a sustainable development in Kalaw is broad in scope and has been considering both physical, financial, organisational and institutional solutions. Overall development strategies are presented in the first part. Within the themes of Urban-rural linkages, Green/blue infrastructure, Social structure and co-creation, Heritage and identity, Sustainable mobility as well as Tourism and local economic development more specific development proposals have been developed.



Figure 30: Overall proposal of Kalaw 2030 (for details, see thematic maps in chapter 5).

1. Conserve and Promote the Unique Identify of Kalaw

The rich natural environment, history and reflected architecture and townscape, society where diverse culture can co-exist – are imperative and unique assets of Kalaw, which are very rare to find in other cities in Myanmar. The proposal plans to identify these assets, and conserve and promote identified assets in align with future changes. Enhancement of unique asset can also attract more visitors and encourage local economic development without harming the culture. By doing so, Kalaw can provide a stable economic condition and further maintain its cohesive society.

Core Action Pillars

- 1A. Develop a heritage strategy for Kalaw including conservation and legal framework
- 1B. Forest preservation/protection
- 1C. Landscape management
- 1D. Eco-community tourism development
- 1E. Improved local economic development

2. Healthy, Clean and Safe Environment for Everyone

Kalaw is also for its pleasant weather, clean air and rich natural sources, however, the issues in water sources, Kalaw creek, waste management and drug trade have been raised recent years and possibly harm the living environment. By upgrading current infrastructure service provision and further collaborations, Kalaw will provide healthier, cleaner and safer environment for everyone.

Core Action Pillars

- 2A. Upgradation of water, waste and sewage infrastructure
- 2B. Drug elimination
- 2C. Improved social services such as health clinics
- 2C. Road upgradation and safety management with improved street designs for walkability and greenery
- 2D. Public facilities and public space upgradation and provision (Kalaw Creek, Maw Myay Oo Park etc.)

3. Combined development

Socio-economic activity of Kalaw is deeply related to the surrounding rural areas. Farmers sell agricultural products at the market, cargos and exchanges in Aung Pan, tourism which encourage visiting to other surrounding hilly villages. Existing connections with Heho airport and Inle Lake region where is one of the most popular tourists' destinations in Myanmar have a strong potential to strengthen further exchanges in Kalaw. This proposal aims to strengthen connectivity and implement synergetic actions for development in surrounding areas and improved local economic development.

Core Action Pillars

- 3A. Upgradation of Market
- 3B. Promoting organic farms and products
- 3C. Improved connectivity between villages through upgradation of roads and trade networks
- 3D. Trekking routes
- 3D. Encourage SME development

4. Inclusive and participatory development

One of the unique assets of Kalaw is its cohesive society which has been enables different cultures/groups live together peacefully. This is important aspect as a model to other cities in Myanmar, and should be carefully inherited and maintained from every spectrum in the planning.

Core Action Pillars

- 4A. Strengthen transparency and inclusiveness in the planning process
- 4B. Improved collaboration between departments, civil society, private sector and academia
- 4C. Inclusive and participatory processes in future urban development considering both urban and rural needs
- 4D Consideration of needs of different socio-economic groups in the future development of Kalaw
- 4E. Identify vacant properties and land to provide affordable housing options for i.e. forest squatters

5. THEMATIC FOCUS AREAS OF THE STRATEGIC PLAN

The thematic focus areas of the strategic plan contain further developed proposals within the 6 themes. Specific improvement projects are proposed as well as strategy for implementation to meet the vision of Kalaw 2030.

5.1 Urban – rural linkages

The proposal builds on analysis and stakeholder interviews and aim to strengthen the linkages between urban and rural areas. A high number of commuters from surrounding rural areas are going into Kalaw town for selling agricultural products. The proposal is covering the economic opportunities of the rural population and possibilities for increased agricultural activities and trade. In addition, the possibilities are increased for harvest in closer proximity to the town through organic farms and gardens as well as improved possibilities for recreation. The railway was identified through interview having high potential for improved connectivity and low-cost transportation of goods and for vendors selling in the market. Overall improvement of road-connections for different modes of transport for increased connectivity is required in collaboration with Shan state government.



Figure 31: Thematic proposal, urban - rural linkages.

Overall development proposal

- Development of the agricultural sector through organic farms, improved technology and increased variation of crops for biodiversity and higher revenue
- Improved connectivity and road network through upgradation and construction of roads between villages and town as well as bus station in Kalaw for increased public transport, locally and regionally
- Improved access and walkability to rural parts of Kalaw township through the provision of bicycle lanes and trekking lanes for residents and tourists
- Provide basic infrastructure and improved system of education, health and other urban services to villages
- Improved local economic development and knowledge generation
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- Increased biodiversity and green structure through conservation of forest area, replanting of pine trees, pocket parks in the city centre and green corridors between urban and rural areas
- Balanced development and mutual respect between urban and rural areas in planning and implementation, including involvement of groups from different rural areas in early stage of processes.



Figure 32: Example of regional bus station



Figure 33: The agricultural sector will continue to be one of the most important in Kalaw township

Specific sustainability indicators regarded in the proposal:

- Poverty reduction
- Social cohesion
- Accessibility to urban functions and services
- Local economic development
- Project economy and cost benefit
- Hazardous emissions

Social inclusion analysis

Residents inside Kalaw already have privilege from better access and business opportunities, those in rural area are considered to have poor access and thus the priority to provide better infrastructure to them is highlighted. Potential groups who will benefit from the proposal have been listed; farmers, consumers (both local, visitors from outside or nearby town), local people nearby town, children and youth. For each group, the specific positive impacts from this proposal is clarified. In order to provide equal access, early stage involvement of groups from different rural areas in the planning processes will be necessary.

Beneficiary	Types of Benefit	Period
Visitors (local and international)	TrekkingRiding bicycleStudying eco systemEqual opportunities	From project start
Agricultural sector and local farmers	 Increase family income Advanced agricultural technology Expand market opportunities Better opportunity for receiving high technology 	From project start
Consumers, local, visitors, people nearby Kalaw	 Fresh and clean food Good health Reasonable price Depending on location, people from nearby places can buy and eat 	

Villagers nearby Kalaw	 Good transportation Mutual respect between and balanced improvement between town and villages Increased GDP Equal opportunities 	From project start
Children and youth	 Can play freely and safely Recreation Fresh air Equality for all 	

Integrated solutions

One of the core ideas of SymbioCity is that the efficiency of integrated solutions can create synergies among urban systems in order to increase sustainability, enhance efficiency and reduce negative impacts and costs. Example of some specific ideas proposed for more integrated solutions, connecting the different urban systems for urban-rural linkages:

- Upgrade of exiting parks, construction of pocket parks, plant flowers, storm water management and provision of playground equipment in the city centre (Public space, and landscape/ecosystem)
- Green corridors between urban and rural areas with improved greenery along roads (Landscape/ ecosystem and Mobility/traffic)
- Improved technology and knowledge for organic farming, introducing Seeds, Natural Fertilizers (Cow Manure and Ash), Farming Machines and Tools (Landscape/ecosystems, material/waste, ICT)



Figure 34: Illustration of the way different urban systems are connected in the proposal for urban-rural linkages.

Impact assessment

An impact assessment was done to analyse important ways of maximising positive effects of the proposal and minimise negative impacts during implementation.

IMPACT ASSESSMENT OF PROPOSAL – Urban-rural linkages					
Type of Impact	Target Group	Positive Outcomes	Negative Outcomes	Short/Medium/ Long Term	Measures to max. positive & min negative impacts
Poverty Reduction	 Poor people, Land owners Children People from rural and urban areas 	Economic opportunitiesIncreased land prices	 Impact on peoples livelihood during implementation 	Medium term	• Need to inform and discuss in advance i.e. in case of relocation
Social Inclusion Accessibility of services	 People from rural areas Children, Farmers 	 Balanced development between urban & rural (social, economic, health, education) 		Medium term	• Organize the festival/event that can be participated both rural and urban

Strategy for implementation

Concrete steps and processes that would enable the realisation of the spatial vision were laid out. Specific key projects of the proposal were further developed into an implementation and maintenance strategy:

	PROJ	IECT	MANDATE/S	TAKEHOLDER
THE WHAT	THE WHEN	THE HOW	IMPLEMENTATIONN	MAINTENANCE
Upgrading existing farmland to organic farms	Short Term	 State-sponsored loans with very low interest rates Technical assistance for farmers Exhibition for local food/ products Loan for those who cannot afford to have organic farms Farm rental Providing guidelines for the transition to an organic system without harming the environment Organizing the use of modern methods from traditional farming methods Technical assistance for farmers and awareness raising about organic farming Exhibition about local food and products 	 General Administration Department Land Registry Department Department of Forestry Department of Agriculture Department of Consumer Affairs Locals TDC NGOs 	 Local farmer Agriculture Department TDC
Re-planting of pine trees and preservation of resources	Long term	 Requesting annual budget from the Union level Local participation Engage local ownership through education of locals Systematic assessment by existing laws. Tree replanting system, plant one tree if one tree is cut Stricter limitations on encroachment in forests Encourage the use of alternative fuels 	 General Administration Department Land Registry Department Department of Forestry Department of Agriculture Hotel and travel Locals NGOs TDC 	 Forest Department Local people Township Management Committee NGOs Tourism sector
Upgrade village-to- village roads, and construct new inter- village roads	Short term	 Annual Budget Request (Union, State / Region Government) Systematic use of roads by villagers Enhancing long-term sustainability capacity Strict regulations on overloading of vehicles Awareness raising for long-term use, maintenance 	 Rural Road Department Hluttaw Planning and Implementation Committee Locals NGOs 	 Rural Road Department Locals Village management committee

Construction of Pocket Parks and Pine Gardens	Short term	 Fine for cutting trees Fines for land expansion Budget from the Department of Forestry, Tax collection from TDC Donations from business people Enhancing long-term sustainability capacity Public awareness by holding nature-based sports competitions Teaching children to be in nature from an early age 	 Department of Forestry Hluttaw Planning and Implementation Committee TDC Locals NGOs 	 TDC Locals Forest Department NGOs
Development of Bicycle lanes and Trekking lanes	Short term	 Hotel and Tourism Fund Local and departmental cooperation in promoting local tourism to make it more popular among foreign tourists Advocate local people and visitors to increase awareness 	 Rural Road Department Planning and Implementation Committee TDC Locals NGOs 	 Rural Road Department TDC Locals

The hindering and helping forces were examined to get a better understanding of how to mitigate the potential forces that might delay project implementation.

Hindering/helping forces for implementation			
Hindering forces:	Helping forces:		
 Budget Extension of farming Informal logging Technical skills Awareness and public unity Unreliable market for organic food Public collaboration Affected persons because of the project and their satisfaction Guidelines, rules and laws Collaboration between departments Forest fire Ward/Village administrator 	 Hluttaw Representative SymbioCity Process Local People who want to develop their place Local and foreign travellers Guidelines, rules and laws Collaboration between departments Public awareness on environmental conservation NGO, CSO Ward/Village administrator 		

Cost estimation

For some of the key projects, costs were identified and roughly estimated to propose different types of financial options for the realisation of the proposal.

Project Proposal Title	Type of Financial Cost	Estimated Cost	Suggested Mode of Financing
1) Upgrading existing farmland to organic farms	 Technology Land Cost Seeds and Machinery Water Supply 	20 Lakh 500 Lakh 30 Lakh 100 Lakh	NGO, INGO, Village Committee, Agriculture Department, Water Resources Department, Budget Department in Correspondent Ministry.
2) Re-planting of pine trees and preservation of resources	 Land Cost Equipment for playground Seeds and Technology Water Supply Maintenance 	500 Lakh 100 Lakh 50 Lakh	
3) Upgrade village-to- village roads, and construct new inter- village roads	 Final Road (Asphalt) Second Final Road (Stone) Concrete Road Normal Road (soil) Landscape Street Light Pole Shady Trees 	2200 Lakh 1800 Lakh 2500 Lakh 300 Lakh 1000 Lakh 900 Lakh 600 Lakh	State Budget, Union Budget, Grant, Loan.

Collaborative structure for implementation of proposal

Multi-disciplinary collaborative options by defining target organization by aim and frequency of suggested activities for the continuation of work and implementation of proposal were developed. This aim to create avenues to institutionalise the collaborative work methodology and improve sustainability and knowledge in project implementation.

Type of collaboration	Organization	Stakeholders	Frequency
Advising	TDC, GAD, KTO, Town planner, Ward administrator	Chairman of township development committee	Every 3 months
Influence on Decision Making	MP, respective departments	MP, respective department head	Twice a year
Thematic areas	GAD, planning, TDC, NGO, respective department	TDC	Every month
Infrastructure	Respective departments, NGOs	TDC	Every 3 months
LED	INGO, locals, chamber enterprise	Market development committee	Twice a year

5.2 Green/blue structure

The proposal for green/blue structure in Kalaw is covering both aspects of forest conservation, biodiversity and public space accessibility as well as infrastructure improvements linked to the challenges of water shortage, waste management, drainage and risk of flooding. Field analysis and interviews also put emphasis on the condition of Kalaw creek. The creek has both potential of reclaiming as a primary recreational node of the city, and threat of flooding. The flood plain of the creek covers the current location of the five days' market which posed a persistent threat to both the local economy and the citizens dependent on it for a living.

Overall development proposal

- Preserve forest and prevent deforestation for biodiversity, improved air and disaster risk reduction
- Increased accessibility to public spaces through upgradation of Maw Myay Oo Park
- Improved greenery inside Kalaw, along roads and through pocket parks
- Develop recreational area, walking route and view point in Ma Naw Hla Mountain
- Protection and revitalisation of Kalaw Creek through awareness raising, prevention of disposal and trash, improved water flow, upgrade of recreational spaces.
- Improve drainage system through natural irrigation, landscaping and drains.
- Preserve existing water sources and find additional water sources in order to provide enough water for the whole city.
- Encourage integration and collaborations among various stakeholders such as citizens, civil society, private sectors, municipal government.
- Organised sustainable waste collection including recycling and separation of waste, specifically around the market area.





Figure 36: Example of integrated drainage solution

Figure 35: Thematic proposal, blue/green structure



Figure 37: Two examples of local storm water management solutions from the visit in Norra Djurgårdsstaden, Sweden. Storm water is managed as a resource that provides for aesthetic values and serves as irrigation for greenery.

Specific sustainability indicators regarded in the proposal:

- Health and sustainable lifestyles
- Walkability
- Meeting places
- Ownership
- Biodiversity and ecosystem services
- Reduced air pollution
- Erosion and deforestation

Social inclusion analysis

Low-income and high-income groups in some parts of Kalaw live close to each other. The lowest income level area such as Ward 11 do have lower socio-economic level, however, they have self-sufficient system working in agricultural and farming business. Potential groups who would benefit from the proposal have been listed down. In addition, some groups that will be negatively impacted by the proposal were defined as: tree loggers, charcoal makers, miners, gold collectors, bird hunters, private water distributors.

Beneficiary	Types of Benefit	Period
Animals in the forest	 Microclimate and improved weather conditions when preserved forests and minimising deforestation Increase bird species 	
Hotel owners	 Forest conservation to attract more people and improved weather conditions Economic opportunities 	As soon as project starts
People who live near Kalaw creek	 Minimised flooding during monsoon No waste in the creek Clean water Good social standard as well as improved health and living conditions 	From project start to end
Tourism service	 Better job opportunities Service to people in Kalaw town as well as other surrounding areas 	Start of implementation of activities
Business person	 Forest conservation to attract more people and improved weather conditions Increased income 	From project start
Pedestrians	 Fresh air leading to improved health Health benefit from improved walkability 	From project start

Integrated solutions

Example of some specific ideas proposed for more integrated solutions, connecting the different urban systems for blue/green structure:

- Improved drainage system and increased greenery in order to manage water levels and prevent from flooding
- (Sanitation/water, landscape/ecosystem and urban function)
- Clean Kalaw creek for improved water flow, minimised waste and recreation area
- (Landscape/ecosystem, material/waste and public space)
- Minimise squatting in forest areas and provide for affordable housing options (Urban function, landscape/ecosystems
- Sustainable Waste Management System with recycling, reuse and energy production, specifically around market area (Urban function, Energy, material/waste)



Figure 38: Illustration of the way different urban systems are connected in the proposal for green/blue structure

Impact assessment

An impact assessment was done to analyse important ways of maximising positive effects of the proposal and minimise negative impacts during implementation.

IMPACT ASSESSMENT OF PROPOSAL – Green/blue structure					
Type of Impact	Target Group	Positive Outcomes	Negative Outcomes	Short/Medium/ Long Term	Measures to max. positive & min negative impacts
Health and Sustainable Lifestyles	 Locals Forest department Animals Travelers Informal settler Firewood cutter Charcoal maker 	 Fresh air Live closer to nature Natural beauty of Kalaw 	• Effect on economic condition	Long term	 Plant trees Define area for firewood and charcoal maker Alternative livelihood
Walkability	LocalsTravellers	Good healthBalanced weatherImproved wellbeing		Long term	 Construct walking lanes Recreational spaces and seating places Public toilets
Meeting Places	 Children Travellers People living inside Kalaw town 	PlaygroundPicnic location		Long term	 Recreational spaces and seating places Public toilets
Ownership	Respective departmentsCommunities			Long term	 More NGOs Issue a certificate/ permit for community ownership PPP
Biodiversity and Ecosystem Services	AnimalsLocals				• Tree planting

Strategy for implementation

Concrete steps and processes that would enable the realisation of the spatial vision were laid out. Specific key projects of the proposal were further developed into an implementation and maintenance strategy:

	PROJ	IECT	MANDATE/S	TAKEHOLDER
THE WHAT	THE WHEN	THE HOW	IMPLEMENTATION	MAINTENANCE
Preserve forests and avoid deforestation	Long term (20 years)	 To plant pine trees To preserve natural plants To maintain the ecosystem Clarify roles of village administrators and forest department to manage forest Define disciplines and prohibit areas and inform people. Understand the situation of forest squatters and plan for housing provision 	 Forest Department GAD Kalaw Tourism Organization NGOs PPP 	 Forest Department GAD Kalaw Tourism Organization NGOs PPP
Upgradation of Maw Myay Oo Park (Intended for children and the elderly)	Short term (2 years)	 Plant cherry, pine, red and blue jacaranda, golden shower flower Water slide, water fountain/fire hydrant/ stream Fitness Zone Play Ground for Children Garden Seats Landscaping and flowers Public toilets 	 TDC State Government Donor 	• TDC
Improved shade and ecosystems in Kalaw through new trees and flower plants in some specific places	Medium (10 years)	 Conserve forest Planting Green areas and pocket parks Walkways, trees and plants along the roads Seating areas Public toilets 	 TDC NGO EPC Road Department GAD Forest Department Locals PPP 	TDCLocalsPPP
Development of walking zone in Ma Naw Hla Mountain with view point at Hmaing Lone mountain	Short term (3 years)	 Upgrade walkways Improve the road Plant pine trees along the road Resting areas Accommodation Public toilets Waste disposal 	 TDC GAD Forest Department Locals NGOs PPP 	 TDC GAD Forest Department Locals NGOs PPP
Flood prevention in Kalaw creek	Short term (1 year) / long-term (10 years) and above	 Conserve forests Awareness raising about pollution, waste recycling and reuse Cleaning of creek Maintenance Prevent disposing grey and black water into the creek 	 TDC Water Resource Department State Government Donor 	TDCState GovernmentDonor

The hindering and helping forces were examined to get a better understanding of how to mitigate the potential forces that might delay project implementation.

Hindering/helping forces for implementation			
Hindering forces:	Helping forces:		
 Informal logging (define areas for formal logging and other job opportunities) Forest fire (public awareness & plant trees which can prevent fire such as banana trees inside the forest) Waste, disposal site Limitation of budget One person one tree policy Permit for area of planting Public opinion 	 NGO Local people in town Safety Climate Transportation Township level department 		

Cost estimation

For some of the key projects, costs were identified and roughly estimated to propose different types of financial options for the realisation of the proposal.

Project Proposal Title	Type of Financial Cost	Estimated Cost	Suggested Mode of Financing
1) Preserve forest and avoid deforestation	Seeds and plantsLabourFertilizer	50 Lakh	NGO, INGO, KTO, Grant.
2) Upgradation of Maw Myay Oo Park	 Equipment Labour Playground for children Water fountain Fire fountain Furniture Flower box Public toilets Food stalls 	200 Lakh	Stall renting fees, KTO, NGOs and other CSOs, fund for upgrading of park.
3) Improved shade and ecosystems in Kalaw through new trees and flower plants in some specific places	 Cherry and other flower plants Labour Fertilizer Trees 	30 Lakh	Forest department, community contribution (plants), NGOs
5) Flood prevention in Kalaw creek	 Waste bins Disposal sites for hazardous waste 		Community contribution, TDC

Collaborative structure for implementation of proposal

Multi-disciplinary collaborative options by defining target organization by aim and frequency of suggested activities for the continuation of work and implementation of proposal were developed. This aim to create avenues to institutionalise the collaborative work methodology and improve sustainability and knowledge in project implementation.

Type of collaboration	Organization	Stakeholders	Frequency
Advice	DUHD, Department of Rural Development, Department of Housing, Planning Department, GAD, TDC, Land Record Department, KTO, Forest Department, Electricity Department	Town planner, AD (DRD), AE (DoH), AD (GAD), AD (TDC), AD (Planning), DSO (Land Record), Chairman (KTO), Staff officer (Forest Department), AE (Electricity)	Every two months
Influence on Decision Making	GAD, TDC, Planning	AD	Twice a year
Thematic Areas	KTO, Planning, TDC, URDI, GAD, Town Elders, Owner of heritage buildings, Member of Parliament	Chairman (KTO), DD (URDI), AD (GAD), AD(Planning), Town elders, Owner, MP	Once a month

5.3 Social structure and co-creation

The proposal builds on the challenges identified, field visits and interviews. Ranging from ranging from economic perspectives to environmental issues the proposal is broad with emphasis on social services, socio-economic development, knowledge generation and education, safety and housing for resettled communities. As Kalaw is home to five ethnic minority groups importance is also put on inclusion of minorities in future development processes.

Overall development proposal

- Increased number of public spaces and night market for recreational and social activities.
- Increased safety, specifically for women and girls, through improved lightning, female drivers in public transport and measures for minimising drug trafficking and people affected by alcohol.
- Improved possibilities for knowledge generation through vocational training schools, especially for women, to increase business opportunities.
- Encourage SME development.
- Develop Kalaw into 'Zero trash'-town, through a system to produce energy from landfills and waste collection system.
- Promote organic farms, markets and ecological gardens to increase biodiversity, job opportunities and community development.
- Improve walkability for different groups through the provision of walking lanes and improved traffic safety.



Figure 39: Thematic proposal, Social structure and co-creation

- Minimise the challenges of drug use through rehabilitation centre, youth centres and implementation of drug free zones.
- Improved social services through health care centre, hospital, medical and educational facilities and child day care centre.
- Schools and affordable housing for resettled communities.
- Visibility of women led organisations to highlight and raise awareness of gender issues.
- Inclusive development processes with collaboration between departments, sectors, professions as well as inclusion of communities.

Specific sustainability indicators regarded in the proposal:

- Health and sustainable lifestyles
- Social cohesion
- Community engagement
- Gender equality
- Cultural heritage and local identity
- Tenure security



Figure 40: Example of public space developed together with young girls, for dance and cultural activities.



Figure 41: Improved accessibility to for market area for different groups \neg as well as a new night market are proposed.

Social inclusion analysis

Rent and land prices of Kalaw was looked into to identify socio-economic status, 'middle class' in Kalaw can be slightly upper than average Myanmar middle class, since the population here already have better standard. Specific beneficiaries were highlighted: Women, Youth, Elderly, Children. The group also proposed their priority by showing ratio for each thematic target as follows; children – 100%, safety – 80%, Elderly – 75%, satisfaction from parents -60%.

Beneficiary	Types of Benefit	Period
Women	 Socio economic improvement Able to ask whatever they want Women access to exercise, safety, increase living standard, confidence Mother can work freely Work opportunities Health care improvement Recreation 	3-5 years 1 year 5 years 3 years 2-5 years 5 years 3 years
Youth (50%)	 Transparency, mutual discussion, help each other Crime free zone Better health, better character Better communication between youths and society Women safety and confidence Unity Job opportunities Accessibility to better education Closer interaction between elderly and youth Better understanding on environment issues and laws Better productivity in agricultural production Pleasant environment Conservation of heritage with collaborative effort and understanding its value Sharing knowledge, each other Advancement of social and economic standards SME development Improvement of Business ideas Identity and proudness of Kalaw 	Long term 3-5 years 3-5 years 3-5 years 3-5 years 3-5 years 3-5 years 3-5 years 1-3 years 1-5 years

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Elderly (75%)	 Satisfaction High Living standard Happy life Time management Long life Recreation Pleasant weather 	1 year 3 years 1 year 3 years 3-5 years 3 years 10 years
Children (100%)	 Safety Character, education Happy life Unity Confidence Basic critical thinking High education level Hope for job opportunities Better health Enhance knowledge Heritage awareness Advance technology 	5 years 1 year 1 year 3 years 3 years 3 years 3 years 5 year 1year 1 year 5 years
Visitors (80%)	SafetySecure feeling in visiting around the town even at night time	3-5 years
Parents (60%)	Satisfaction for childrenChildren have better life	As soon as program starts

Integrated solutions

Example of some specific ideas proposed for more integrated solutions, connecting the different urban systems for social structure and co-creation:

- Improved walkability and prioritisation of pedestrian lanes connecting different public spaces with trees, landscaping and benches. (Public space and mobility/ traffic)
- Improved Wi-Fi-access and digital apps for tourism and local economic development i.e. Tourism information, trekking lanes, parking. (ICT, urban functions, mobility/ traffic)
- Improved living standard through green environment, affordable housing, social services, vocational training, educational facilities and job opportunities. (Urban functions, building, landscape/ecosystems, waste/material)
- Public energy grid for whole township for improved electricity as well as street lightning with solar panels in the city for improved safety. (Energy and urban functions)



Figure 42: Illustration of the way different urban systems are connected in the proposal for social structure and co-creation.

Impact assessment

An impact assessment was done to analyse important ways of maximising positive effects of the proposal and minimise negative impacts during implementation.

IMPACT ASSESSMENT OF PROPOSAL – Green/blue structure					
Type of Impact	Target Group	Positive Outcomes	Negative Outcomes	Short/Medium/ Long Term	Measures to max. positive & min negative impacts
Health & Sustainable Lifestyle	YouthElderlyKidsWomen	 Entertainment Social Life Happiness Education Job opportunities 		Medium term	
Social Cohesion	 Ethnic groups Citizens from different socio- economic groups Visitors 	Inclusive/integrated approachNight Life	• Discrimination	Medium term	
Community Engagement	Shop keepersResidents	Job opportunitiesNew meeting places		Short term	
Tenure Security	 TDC/Ward leader Shop keeper House owner Resettled communities 	 TaxSecure Tenure	 Social Conflict Conflict with Committee 	Short term	

Strategy for implementation

Concrete steps and processes that would enable the realisation of the spatial vision were laid out. Specific key projects of the proposal were further developed into an implementation and maintenance strategy:

PROJECT		MANDATE/STAKEHOLDER		
THE WHAT	THE WHEN	THE HOW	IMPLEMENTATION	MAINTENANCE
Night Market, place making and recreation area created by the community	Short term	 Identify locations by TDC Establish rules and regulations Forming committee Awareness program for healthy and clean food Encourage organic food and farming Identify public spaces for community-based projects with social activities near night market 	 TDC GAD Tourism Management Committee Shopkeepers Night Market Management Committee Youth community 	 TDC Shopkeepers Night market Management Committee Youth community

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Organic Market and plantation	Medium term	 Promoting organic food production Develop organic food market local and international trade Night market Day market Technical assistance and training for organic food and vegetables Capacity building training for farmers Cooperation with Kalaw Tourism Organization (KTO) and Hotel Association 	 Business People / Private sector Farmers Technical experts Villagers Hotel association 	 Business people Farmer Technical experts
Walkable streets and pedestrian	Medium term	 Walkway Network Plan Establishing public-made recreation places along sidewalks (e.g. flowerpots and chairs made by the public) Placemaking by residents along and connected to walkway (e.g. Landscaping, Benches, Playgrounds) Place for social activities for elderly and women and playing area for kids Adequate lighting along the walkway Pedestrian oriented Rules and regulations Improvements of accessibility for disabled i.e. ramps 	• Residents / Public Participation Program	 Residents PPP Social Organizations
SME for local products and handicrafts	Medium term	 Vocational training school Identifying available land (GAD, other respective agencies) Technical assistance Development of local products, Handicraft Marketing Quality control 	 Ministry of Social Welfare Ministry of Industry Ministry of Education 	 Local Government Business people Entrepreneurs Public
Waste management	Medium term	 Land fill site management Waste separation, 3R-Reduce, Reuse and Recycle Awareness for locals and international visitors, Law establishment Public collaboration 	 TDC Town cleaning committee Community Social organisations Citizens Public participation program 	 One State One Township Committee TDC + GAD Town Management Committee Residents/ Public Participation Program Social Organisations Youths EPCS
Drug rehabilitation centre	Long term	 One state- one township Awareness raising (schools, shops, youths) Brochures and information Rehabilitation programme for drug users 	 Social organization / Youth Police 	 One State One Township Committee GAD Ministry of Home Affairs Ministry of Health

The hindering and helping forces were examined to get a better understanding of how to mitigate the potential forces that might delay project implementation.

Hindering/helping forces for implementation			
Hindering forces:	Helping forces:		
 TA Human Resource Management & Capacity Building Financial Assistant Land Use Management Plan Technical Infrastructure Plan Poor Coordination Public Participation 	 Strong Social Organization Social Cohesion SymbioCity Process Fertile Land Willingness of people Efforts by government One State One Township Local product & handcraft Public participation Town Plan 		

Cost estimation

For some of the key projects, costs were identified and roughly estimated to propose different types of financial options for the realisation of the proposal.

Project Proposal Title	Type of Financial Cost	Estimated Cost	Suggested Mode of Financing
1) Night Market, place making and recreation area created by the community	 Design Fee Water Supply Electricity Temporary Tent Building cost and design cost for place making 	N/A	Internal Revenue, Public Budget PPP
2) Organic Market and plantation	Salary for techniciansTechnical assistance feeLoan for organic farm	N/A	Internal Revenue, Rent, Public Budget
3) Walkable streets and pedestrian friendly recreation areas	ConstructionElectricityCCTVLandscape	N/A	Internal Revenue, Public Budget, Developed Revenue, External Revenue
4) SME for local products and handicrafts	 Building Land Trainer Training accessories 	N/A	Developed Revenue, External Revenue
5) Waste management	 Uniform Safety accessories Garbage track/bin/plastic bag Advertising cost Awareness fund Track oil/fuel Salary for labours Dump site clearing cost Incineration cost Technician's fee Treatment cost Electricity cost 	N/A	Internal Revenue, Public Budget

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6) Drug rehabilitation centre• Awareness Program • Advertisement cost • Incentive fees • Building cost, medical assessment cost • Salary for hospital staff	N/A	Developed Revenue, External Revenue
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Collaborative structure for implementation of proposal

Multi-disciplinary collaborative options by defining target organization by aim and frequency of suggested activities for the continuation of work and implementation of proposal were developed. This aim to create avenues to institutionalise the collaborative work methodology and improve sustainability and knowledge in project implementation.

Type of collaboration	Organization	Stakeholders	Frequency
Advice	TDC, Consultants Team, MES, AMA, GAD, Concerned Department, Social Organization, Advisory Group, Guide Association	EO, AE, Consultants, CEO, AD, Head of departments, KTO, Hotels, Social Groups, Tour Guides	
Influence on Decision	Union Government, MPs, State	Chief minister, Secretaries,	
Making	Government, GAD	Directors	
Thematic Areas	Development Planning	Chairman (KTO), DD (URDI),	Monthly
	Spatial Planning	AD (GAD), AD(Planning), Town	Quarterly
	Water Supply Systems	elders, Owner, MP	Every 3 months

5.4 Heritage and identity

The proposal for heritage and identity is highly emphasising the preservation of unique assets of Kalaw. The relationship between new development and conservation of existing heritage values is further deepened where newer structures are built in harmony with the city's environment. Improved institutional mechanisms and regulations are highlighted as important factors to reach the vision of Kalaw 2030. The proposal builds on conducted heritage mapping and inventory, field visits as well as interviews.

Overall development proposal

- Heritage strategy and legal measures for balancing of new development and conservation and protection of natural, cultural, social and historic heritage value in Kalaw including:
 - o Identification of criteria for heritage, and list of heritage areas
 - o Develop heritage strategy with conservation zone
 - o Integrate heritage strategy into town plan (i.e. zoning, height control, material guideline)
 - o Local regulation of high-rise buildings and design guidelines to ensure that newer structures are built in harmony with the existing environment



Figure 43: Thematic proposal, Heritage and identity

- Upgradation and renovation of specific buildings i.e. Kalaw Post office, market and Railway station.
- Budget support for private heritage owners to maintain heritage buildings.
- Preservation of natural heritage such as rivers, forests and mountains through retained view lines and replanting strategy.
- Overarching policy or regulation for housing and monitoring system to encourage developers and investors for sustainable development that also connects housing with public space development, bicycle lanes and pedestrian lanes.
- Opening of museum and exhibition about Kalaw history and development as well as increase the number of traditional festivals.
- Affordable housing provision and livelihood opportunities for informal settlers staying in forest area.
- Protection and development of Kalaw creek area as being one of main water sources for Inle Lake.



Figure 44: Old post office in Kalaw



Figure 45: Inventory of existing buildings in Kalaw as part of heritage mapping and analysis.

Specific sustainability indicators regarded in the proposal:

- Community engagement
- Land use and functional mix
- Walkability
- Local economic development
- Tenure security
- Biodiversity and ecosystem services

Social inclusion analysis

The group pointed out factors such as social, cultural and environmental reasons impact why people live in a certain area, upgradation of the 5 days' market can have positive impact on diverse groups such as sellers, buyers from both local and surrounding area.

Beneficiary	Types of Benefit	Period
Locals in Kalaw	 Improvement in tourism Increase income of local people Law enforcement, new regulation improves safety and cleanliness. 	10 years
Market people in Kalaw Market	 Higher income More visitors Clean market Better tax collection from the market 	
Heritage owner	 Benefit from law enforcement Improved and systematic town planning Understanding the value of heritage buildings 	

Hotel owner	High incomeIncreased number of guestsExtended hotel market	
People near Kalaw creek	 No flooding No disaster Safer homes Clean water and better sanitation 	

Integrated solutions

Example of some specific ideas proposed for more integrated solutions, connecting the different urban systems for heritage and identity:

- Conserve Kalaw creek, Inn Pyin water source and other water sources as well as developing the area for recreation. (landscape/ecosystem, public space and sanitation/water)
- Affordable housing and livelihood opportunities for informal settlers living in forest area (Landscape/ ecosystem and urban function)
- Provide smart system (ICTs) for schools, governmental services, hospitals and public space (ICT, building and public space)
- Develop the road in front of Yadanar Talkie House into a prime tourist spot with coffee shops, art galleries and music. (Urban functions and public space)



Figure 46: Illustration of the way different urban systems are connected in the proposal for heritage and identity.

Impact assessment

An impact assessment was done to analyse important ways of maximising positive effects of the proposal and minimise negative impacts during implementation.

IMPACT ASSESSMENT OF PROPOSAL – Heritage and identity					
Type of Impact	Target Group	Positive Outcomes	Negative Outcomes	Short/Medium/ Long Term	Measures to max. positive & min negative impacts
Community engagement	 Men Women Children Ethnic groups Experts 	 Public voice Transparency Trust in government Direct relations to senior management 	Potential accidentsAir/sound pollution	Short term	 Social Media, Use technology Capacity building of staff Identification of i nfluencers in the ward
Walkability	 Road users Pedestrians	SatisfactionReduction of CO2	• Potential accidents	Long term	LandscapingPedestrian lanes
Local economic development	 Locals Hotels Guest House owners Investors Restaurant owners Guides 	 Increase individual income and GDP Social life 	• Development can affect heritage	Long term	 Awareness raising Planning Establish laws and regulations

Strategy for implementation

Concrete steps and processes that would enable the realisation of the spatial vision were laid out. Specific key projects of the proposal were further developed into an implementation and maintenance strategy:

PROJECT		MANDATE/STAKEHOLDER		
THE WHAT	THE WHEN	THE HOW	IMPLEMENTATION	MAINTENANCE
Municipal laws for new infrastructure and urban planning that can affect heritage	1 year	 Propose additional components to the development of a municipal law by Hluttaw representatives Submission of relevant proposal for law approval 	 Hluttaw Representative State Government/State Parliament Technical professionals (Lawyer YHT, KTO) TDC 	 Local People Investor TDC Heritage Committee
Conserve forest and maintain parks	1 year	 Take effective action in accordance with the relevant law Issuing rules Housing for informal settlers 	Forest DepartmentPoliceLocalsNGOs	Forest DepartmentPoliceLocalsNGOs
Upgrade 5 days market	1 year	 Renovation and maintenance of Kalaw market Conserve the market structure and original design Identify and arrange the places for vendors systematically Facilities for vendors Establish rules according to the requirements and conditions 	 TDC Market Committee Vendors Management Committee 	 TDC Vendors Market Committe
Upgrade railway station and post office	3 years	• Renovation of railway station and post office by maintaining former structure	 Ministry of Transport Ministry of Culture Subordinate departments Local government and township Heritage experts Residents TDC 	 Ministry of Transport Ministry of Culture Subordinate departments Residents
Upgrade landfill, cemetery and slaughter place	5 years	 Purchase waste disposal equipment Construct new slaughter house Define area of cemetery 	 TDC Private developer License Owners of Cow Slaughter Site Funeral Organizing Committees 	 TDC Religious observance group Residents
Upgrade eastern and western ring roads	2 years	 Add top layer of Asphalt Drainage Walking path Landscaping and trees 	 TDC Ward Administrator Township Management Committee 	TDCWard AdministratorResidents

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Opening of museum, galleries and support to traditional festivals	Annually (short term) (or) 5 years	 Funding for the annual festival Construction of museum 	 Township Organizing Committee / Festival Organizing Committee TDC Vendors and shop owners Township residents Ward administrators 	Heritage ExpertTDCRelevant departments
Conserve Kalaw Creek, Inn Pyin water source and other water sources	5 years	 Conduct survey Housing for people living in informal settlements nearby Upgrade cold water pond and other water sources 	 Water Resources and Development Department TDC Private Developer Residents along the creek 	 TDC Mayor Water Resources Department Technical experts Ward administrators Residents Private developer
Preservation of heritage	5-10 years	 Compile inventory of private heritage buildings Public awareness Consider budget resources for private heritage owners to maintain their heritage buildings Establishment of a township heritage conservation committee State-owned conservation committee formed 	 Heritage Building Owner Heritage Expert State Government TDC CSO Township Management Committee 	 Township Development Committee Owners of private buildings
Relocation of informal settlers who are staying in ring forest or pine forest	5 years	 Land use review List of informal areas Develop socio-economic and public infrastructure Affordable housing provision 	 Informal settlers Local Government TDC Forest Department Land Record Department CSO Resettlement Team (Department + Citizens) 	 TDC Forest Department Land Record Department Residents

The hindering and helping forces were examined to get a better understanding of how to mitigate the potential forces that might delay project implementation.

Hindering/helping forces for implementation				
Hindering forces:	Helping forces:			
 Time and budget requirement for law establishment Informal settler Budget Investor Not enough human resources in Forest department 	 Lawyer YHT Heritage Building Owner Technical experts TDC Management Committee Shop owners and shopkeepers Residents Public awareness Staff capacity Collaboration between NGOs, residents, Forest Department, TDC, Availability of Budget 			

Cost estimation

For some of the key projects, costs were identified and roughly estimated to propose different types of financial options for the realisation of the proposal.

Project Proposal Title	Type of Financial Cost	Estimated Cost	Suggested Mode of Financing
1) Municipal laws for new infrastructure and urban planning that can affect heritage	 Public event Law expert Transaction cost for law establishment 	200 Lakh	State Budget Foreign Aid Private Donor
2) Conserve forest and maintain parks	 Fence cost for ring forest area Signboard/ Mileage stand Staff cost and staff housing for park Recording entrance and exit persons CCTV Cost for planting flowers and trees in park Road, light and other basic requirement for park Bench and recreation camp in park 	1500 Lakh (pine) 2000 Lakh (park)	Pine Union Budget, External and internal Aid, Loan Park State Budget, Government Special Budget, TDC Budget, External and internal Aid, External Ioan
3) Upgrade 5 days market	 Maintenance cost for existing buildings Architect New installation for lighting and electricity 	2000 Lakh	Loan from private bank, State government budget, External and internal donor, Funding for local development, Funding by market family
4) Upgrade railway station and post office	 Station Rail machine maintenance and transportation Landscape within compound Maintenance for existing buildings based on their original design Post Office 	3000 Lakh	Respective ministries, Union budget, External and internal aid
	- Maintenance - Fence - Staff		

Collaborative structure for implementation of proposal

Multi-disciplinary collaborative options by defining target organization by aim and frequency of suggested activities for the continuation of work and implementation of proposal were developed. This aim to create avenues to institutionalise the collaborative work methodology and improve sustainability and knowledge in project implementation.

Type of collaboration	Organization	Stakeholders	Frequency
Advice	Law expert group, Heritage expert group, Forestry expert group, Water resource expert group, architects, residents, private businessmen, YHT, trainees	Law (3), Heritage (5), forest (2), local (5), Private businessmen	Every month
Influence on Decision Making	MP, State government, Ward administrator, Township Management Committee, Township Planning Committee, TDC,	MP (3), Chief Minister, Chairman, secretary and member of each committee,	Every month
Thematic Areas	Heritage Conservation Committee	Chairman, Secretary, Members, respective department, residents, CSOs	Every month

5.5 Sustainable mobility

The proposal builds on the challenges identified and the traffic analysis (figure 27) conducted by the working group. The focus of the proposed development of Kalaw is greenery along streets, upgrade of existing roads with more improved lane divisions that increases accessibility for different modes of transport as public busses and lanes for bicycles. The proposal also includes improvements for better walkability and safety and better access for the elderly, disabled, and young children. Improved regional connections are also reflected through railway and regional bus station. A systematic traffic management system has been pointed out as an important aspect for improved traffic situation in Kalaw to get away from congestion and accidents.

Overall development proposal

- Overall mobility strategy including improved hierarchy of streets – main road, secondary road, local streets.
- Improved mobility and access through upgrade of specific roads including bus lane, space for trucks, bicycle lanes, car lanes and pedestrian street lights, parking for different traffic modes, landscaping and trees.
- Upgrade railway station and railway to improve regional connections and preserve heritage.
- Upgrade Heho airport.



Figure 47: Thematic proposal, Sustainable mobility.

- Improved pedestrian access and facilities especially around areas of high density including market areas and touristspots, the access should be improved especially for the elderly, disabled, and young children.
- Tree planting in public areas and along pedestrian that enable improved biodiversity, health and recreation.
 Improved traffic management system including speed restrictions, proper road signs, safe crossings and prohibition of overweight carriage.



Figure 48: Proposed new section for the Pyi Htaung Su main road.



Figure 49: Proposed new section for the Ring road.

Specific sustainability indicators regarded in the proposal:

- Safety
- Gender equality
- Walkability
- Project economy and cost benefit
- Biodiversity and ecosystem services
- Reduced air pollution

Social inclusion analysis

The group identified local people, visitors, tourism industries, vehicle owners and state government as potential target groups for proposed projects. In addition to the direct impact from road connectivity and safety, the group also raised financial benefit for the government from road tax as well as positive image of Kalaw which can attract and showcase to other cities.

Beneficiary	Types of Benefit	Period
Residents	 Improved health Good transportation/easy travel Road safety Green environment Better transportation services Fast trading for local product Good tourism Low fuel price Children can benefit from road safety Safety for disable persons Elder can travel and rest safe and peacefully Sellers and buyers can have quick transportation for loading products Tourism development can make more benefit 	From project start
Local and international visitors	 Fresh air improves health Good mobility Green scenery Safe tourism services Peaceful environment 	From project start
Tourism business persons and vehicle owners	 Road safety Tourism development Higher income Better services More visitors Better access to nearby towns, villages and other towns of Myanmar 	From project start
State government	 Increasing toll gate and road fee Locally driven development Less crimes because of road safety Using Kalaw as ideal town, other towns in Shan state will have benefits 	From project start

Integrated solutions

Example of some specific ideas proposed for more integrated solutions, connecting the different urban systems for sustainable mobility:

- Provide more trash bins all over the places including bus station, public space and parking areas and develop an organised waste collection/segregation system. The collected waste will be turned into energy. (Energy and waste/material)
- Walkways with solar panel street lights and greenery in roads and streets for improved walkability and accessibility (public space, mobility/traffic, landscape/ ecosystems, energy)
- Digital tools for managing traffic and supervise the following of traffic rules i.e. speed detectors, parking app. (ICT and mobility/traffic)



Figure 50: Illustration of the way different urban systems are connected in the proposal for sustainable mobility.

Impact assessment

An impact assessment was done to analyse important ways of maximising positive effects of the proposal and minimise negative impacts during implementation.

IMPACT ASSESSMENT OF PROPOSAL – Sustainable mobility					
Type of Impact	Target Group	Positive Outcomes	Negative Outcomes	Short/Medium/ Long Term	Measures to max. positive & min negative impacts
Reduce Air Pollution	 Residents living near roads Road users Motorbike users 	Fresh airImproved health		Short term	 Driving Disciplines Awareness Increased public transport and non- motorised transport Greenery
Safety	 Road users Residents living near roads Disabled Elderly Students 	 Reduced number of accidents Safe walks Access to public transport 	• Land owners: if their land area is included in road extension	Short term	 Traffic rules Improved organisation of street, signs and safe crossings
Walkability	StudentsElderlyDisabled	 Improved health Reduce air and noise pollutions 		Short term	 Public awareness Construct benches Plant trees along the roads Walkways Safe crossings
Gender Equality	• Road users	• Men, women and road users are equally safe		Short term	 Improved access to public transport Safe public spaces with good access Improved analysis of how different groups use different modes of transport and develop safe transportation accordingly
Cost Effectiveness	Land owners along the roadBOT companyResidents	 Increased land prices Increased job opportunities for BOT and residents Reduced fuel costs 	 If road is constructed, smell and dust and noise Land owner: if road is extended on their land 		• Land compensation

Strategy for implementation

Concrete steps and processes that would enable the realisation of the spatial vision were laid out. Specific key projects of the proposal were further developed into an implementation and maintenance strategy:

	PROJ	IECT	MANDATE/S	TAKEHOLDER
THE WHAT	THE WHEN	THE HOW	IMPLEMENTATION	MAINTENANCE
IHE WHAI Upgrade of Pyi Thaung Su Road Main Road and classification of 3 road types	THE WHEN Short term, 1-5 years	 a) Pyi Thaung Su Road Identify maximum speed for reducing accident Build safe crossings Sidewalks on each side of the road Bicycle lane Install street lights in the middle of the road Two lanes for vehicles Bus stop with seating for passengers Plant trees for shade b) Myo Pat Road Widening road connecting east and west ring road Street lights Adding sidewalks and bicycle lanes Addition of bus stops Planting trees for shade c) Min Road- between union highway and clock tower Street lights Two roundabouts Bicycle lanes Trees for shadow along roadside Sidewalks on both side d) Station Road Two lanes for traffic Street lights on both sides of road Trees for shadow Sidewalks Bicycle lanes 	IMPLEMENTATION • Road Department • BOT • State Government • TDC • GAD • Road Transport Administration Department • Electricity Department	 Road Department DDA BOT Electricity Department
Upgrade	Short term,	 Street lights for women's safety, Dhamma Sekkyar Road, Winkabar Road, East Myo Pat Road Walkways Upgrade old station 	• State Government	 Railway Department
railway station and its compound	1-2 years	maintaining original designTourist informationParking area	Union GovernmentRailway DepartmentGAD	• KTO

Construction of parking place for trucks	Short term, 1-5 years	 Service Area for drivers Construct on 3 acres compound between Kalaw and Aung Pan 	 State Government Union Government Police Road Department Forest Department TDC GAD Road Administration Committee 	 TDC Road Administration Committee Road Department KTO Residents
Traffic rules, and awareness raising	Short term, 1 year	 Identify maximum speed One-way roads in specific locations Traffic lights Speed detectors at the entrance of the town No-horn zone CO2 free zone Guide posts with reflectors along the road Public awareness through education, seminars and distribution of educational pamphlets Supervision of traffic 	 State Government Union Government Police Force Road Department Road Administration Committee Red Cross Fire Service Department 	 Police Road Administration Committee Residents
Increase foreign investments	Long term	 Invite local and foreign investors for road improvements through BOT regarding road construction bridges, landscape improvements, tree and flower planting, collection of fees. 	 State Government GAD Road Department TDC 	 Road Department TDC

The hindering and helping forces were examined to get a better understanding of how to mitigate the potential forces that might delay project implementation.

Hindering/helping forces for implementation				
Hindering forces:	Helping forces:			
 Law and Guidelines (Project 2) Informal Settlers (Project 2) Budget (Project 3) Land owner whose compound will be affected by the road readjustment (Project 3) Street light (Project 4) TDC Law (Project 5) Truck Driver (Project 5) 	 Residents (Project 1) Pedestrians (Project 1) Visitors (Project 1) Green environment (Project 2) Involvement of ethnic groups (Project 2) Students and cyclist (Project 2) Students and cyclist (Project 3) NGO (Project 3) Health (Project 4) Nice weather (Project 4) Vehicle owner (Project 5) KTO (Project 5) Residents living nearby new road (Project 5) BOT (Project 5) 			

Cost estimation

For some of the key projects, costs were identified and roughly estimated to propose different types of financial options for the realisation of the proposal.

Project Proposal Title	Type of Financial Cost	Estimated Cost	Suggested Mode of Financing
1.a) Upgrade Pyi Thaung Su Road	 Minimize space between each lane of the road Street light in both sides 4 bus stops Maintenance platform and drainage Planting trees Crossing path Asphalt 	1000 Lakh 100 Lakh 200 Lakh 1000 Lakh 100 Lakh 50 Lakh 1000 Lakh	Union Budget, BOT
1 b-e). Upgrade roads within town and boundary roads	 Expansion of both types of roads Upgradation of road inside town and drainage Planting trees Drainage and walkway (boundary road) Asphalt (boundary road) Street lights Indication/signs 	30000 Lakh 10000 Lakh 50 Lakh 10000 Lakh 500 Lakh 100 Lakh	State budget, wheel tax, collective funding, loan from ADB or JICA
2) Upgrade railway station and its compound	 Upgrade resting area for passengers Construct Restaurant Toilet Clean around station compound Flower plants Car parking 	N/A	Union Budget
3) Construction of parking place for trucks	 Upgrade resting area for passengers Construct Restaurant Toilet Clean around the compound Flower plants Parking 	N/A	State Budget
Other) Upgrade airport	 Extend pathways for flight Upgrade passenger waiting area 	N/A	KBZ company, (or) BOT

Collaborative structure for implementation of proposal

Multi-disciplinary collaborative options by defining target organization by aim and frequency of suggested activities for the continuation of work and implementation of proposal were developed. This aim to create avenues to institutionalise the collaborative work methodology and improve sustainability and knowledge in project implementation.

Type of collaboration	Organization	Stakeholders	Frequency
Advice	Township development committee	MP, respective departments, KTO, local people, ITC (NGO)	Every month
Influence on Decision Making	State government, committee members	MP (3), Chief Minister, Chairman, secretary and member of each committee,	Every 3 months
Thematic Areas	Cultural Heritage, Agriculture	GAD, Agriculture department	
Others		Management committee, NGO	

5.6 Tourism and Local economic development

One of the main components of the proposal for tourism and local economic development is the Kalaw Market upgradation. The proposal builds on space analysis of the market area as well as interviews with vendors and customers. The aim of the upgradation is to better services to the customers and improve the quality of infrastructure for the vendors. This will allow the market to be even more of a local tourist attraction.

Furthermore, several routes for heritage and forest walks, improved connectivity and linking different tourism industries are also part of the proposal. Several interviews were conducted to hotel owners and trekking guides. Tourism as foreseen to be a strong driver for the local economic development in Kalaw during the upcoming years. Integrated solutions that would creatively spur economic growth through cross-disciplinary and inter-departmental collaboration has been further explored. To develop the tourism sector in a responsible and sustainable way with positive impact on environment, society and economy through i.e. organic farms, heritage respective developments, community-based ecotourism and support of the integrity of local culture is of highest priority.

Overall development proposal

- Upgradation and infrastructural improvements of the Kalaw Myoma Market in close collaboration with vendors and the market committee. Temporary market can be set up in Kalaw Park during the reconstruction.
- Improved facilities at the five days' market.



Figure 51: Thematic proposal, Tourism and local economic development.

- Extend trekking routes for tourists and encourage more recreational activities such as adventure tour, bike tours, bird watching, animal ride tour, and outdoor activities.
- Encourage and utilize more attractions in Kalaw such as heritage building, green area, and forest, since tourism is the main source for local economy in Kalaw.
- Strategy for green areas and green corridors of Kalaw that increases the number of public parks, includes upgradation of Kalaw Park and its facilities as well as improves accessibility for all groups in society.
- Kalaw cultural museum.
- Conserve the railway station and upgrade it in a traditional way.
- Ensure a balance between development for tourism and respect for existing heritage and nature.
- Define heritage zone and improve the use and accessibility of heritage buildings that can also contribute to generate income for the preservation of buildings.
- Improve roads, access and walkability for residents and visitors.
- Develop Kalaw into an eco-friendly city.

Specific sustainability indicators regarded in the proposal:

- Poverty reduction
- Public transport
- Affordability for users
- Ownership
- Long term balanced budget



Figure 52: Eco-tourism is proposed to be an important part of the tourism sector development in Kalaw.



Figure 53: Example of indoor food market.

Social inclusion analysis

The group raised vehicle owners, workers in the tourism industry, tourists, stakeholders around Kalaw Market as key beneficiaries from proposed proposal. They added that construction companies, informal settlers and beggars were possibly excluded and that measures should be taken to include these groups in the further development of the proposal and implementation of projects.

Beneficiary	Types of Benefit	Period
People working in tourism transportation sector (Owners, Taxis, Drivers, Guides)	 Job opportunities Socio economic development Tourism development makes income 	From project start
People involved in tourism sector (Hotel owner, traditional food seller, tour guide)	 Job opportunities Higher living standard Letting other countries know about traditional food and culture Income Increased expertise 	From project start
Vendors at Kalaw Market	 Job opportunities Easy and affordable for living cost Improved working conditions 	During opening of market
Cultural Museum (public, private, visitors)	 Increased number of local and foreign visitors Sustainability of culture and tradition Good management of heritage 	From project start and opening of museum

Integrated solutions

Example of some specific ideas proposed for more integrated solutions, connecting the different urban systems for tourism and local economic development:

- Forrest conservation, increased greenery, public spaces and extended trekking ways to encourage more recreational activities such as adventure tours, bike tours and outdoor activities for families (Mobility/ traffic, public space and landscape/ecosystem)
- Overall Wi-Fi in Kalaw and improved digital information and tools for tourists and residents i.e. bill-collection mechanism, tourist information system, heritage walks, information about parks and trekking areas (ICT, landscape/ecosystem and public space)
- Development of eco-tourism including i.e. traditional architecture, low energy buildings, recycling and reuse of waste, organic farming and communitydevelopment (building, energy, landscape/ ecosystem, urban functions, material/waste)



Figure 54: Illustration of the way different urban systems are connected in the proposal for tourism and local economic development.

Impact assessment

An impact assessment was done to analyse important ways of maximising positive effects of the proposal and minimise negative impacts during implementation. The impact assessment is done specifically for the upgradation of Kalaw Myoma Market.

IMPACT ASSESSMENT OF PROPOSAL – Tourism and local economic development (Market upgrade)					
Type of Impact	Target Group	Positive Outcomes	Negative Outcomes	Short/Medium/ Long Term	Measures to max. positive & min negative impacts
Ownership	 Shop owner Vendors Residents nearby market Labour in market 	 Good economic situation Increase price of shop Fire Safety 	 During construction period, trading condition is not good, noise increase, difficult transportation. Temporal shopkeeper will face difficulties 	Short term	 Construct quickly in good quality Need to find temporary space for trading
Affordability for users	Shop ownerShop renter	• Good quality shop for those who can afford	 Improvements might lead to increase of costs 	Medium term	 Original owners should be prioritized
Public Transportation	 Residents nearby market Pedestrians Taxi drivers 	 Reduced number of accidents Improved access to transport Improved environment 	• Effects on traffic during construction	Short term	• Traffic Management
Poverty Reduction	ShopkeepersVendorsLabourTaxi drivers	• Job opportunities	• Vendors and labour might have financial difficulties	Long term	• Encourage different socio- economic groups

Strategy for implementation

Concrete steps and processes that would enable the realisation of the spatial vision were laid out. Specific key projects of the proposal were further developed into an implementation and maintenance strategy:

PROJECT		MANDATE/STAKEHOLDER		
THE WHAT	THE WHEN	THE HOW	IMPLEMENTATION	MAINTENANCE
Upgrade Kalaw Myoma Market	Short term	Public AwarenessDesign of marketCall for tendersImplementation	State GovernmentTDCShop Owners	 TDC Shop owners
Upgrade Kalaw Park to be accessible for all groups	Short term	 Call for expression of interest Project proposal review MOU Implementation of project 	State GovernmentTDCPPP	TDCPPP
Open Kalaw Cultural Museum	Short term	 Museum design and renovation Carry out the maintenance and construction work Lease/Transfer of land and building Exhibition for the museum 	 Ministry of Religious Affairs and Culture Ministry of Transport and Communication Private Companies 	 Ministry of Religious Affairs and Culture Ministry of Transport and Communication Private Companies
Maintain and restore Kalaw railway station	Medium term	 Conservation of building Keep Recorded Documents Display of old trains and machines Landscape design Tourism information 	 Union Government Ministry of Transport and Communication Myanmar Railway 	• Myanmar Railways
Development of touring and trekking routes	Long term	 Selection of routes and places Conservation of trees and forests Opening of restaurants along trekking routes Traditional housing for accommodation 	 Ministry of Hotel and Tourism TDC KTO 	 Ministry of Hotel and Tourism TDC

The hindering and helping forces were examined to get a better understanding of how to mitigate the potential forces that might delay project implementation.

Hindering/helping forces for implementation			
Hindering forces:	Helping forces:		
 Budget Land ownership Lack of collaboration Climate change Environmental degradation 	 Residents positive to development State government Member of parliament, travellers Heritage value Local food production Weather Location 		

Cost estimation

For some of the key projects, costs were identified and roughly estimated to propose different types of financial options for the realisation of the proposal.

Project Proposal Title	Type of Financial Cost	Estimated Cost	Suggested Mode of Financing
Upgrade Kalaw Myoma Market	 Demolition work Temporary market Designing fee of new market Maintenance of 4 buildings of Market Reconstruction 	300 Lakh 1400 Lakh 500 Lakh 700 Lakh 47000 Lakh Total: 49900 Lakh	Fund from shopkeeper, Investors, Income from new shops, Annual tax from market, Bank Ioan
Maintain and restore Kalaw railway station	 Design Maintenance of old buildings Landscape management Construction of space to display archives 	50 Lakh 3000 Lakh (maintenance and landscape) 150 Lakh Total: 3200 Lakh	Union Budget, Investors, International grant

Collaborative structure for implementation of proposal

Multi-disciplinary collaborative options by defining target organization by aim and frequency of suggested activities for the continuation of work and implementation of proposal were developed. This aim to create avenues to institutionalise the collaborative work methodology and improve sustainability and knowledge in project implementation.

Type of collaboration	Organization	Stakeholders	Frequency
Advice	TDC	MP, Planning, TDC, township level government departments, MES, AMA, Cultural Department, Hotel and Tourism, YHT, KTO, Ward Administrator, local people, hotel business group	Every month
Influence on Decision Making	Union government State government Tourism Development Committee	Union government, minister of hotel and tourism, minister of transport and communication, minister of religious affairs and culture, chief minister of Shan State	Every 6 months
Thematic Areas	TDC	GAD, TDC, Myanma Railway, Hotel and Tourism Department, Hotel business group, YHT, KTO	

6. RECOMMENDATIONS FROM THE KALAW SYMBIOCITY PROGRAMME

The SymbioCity Capacity Building programme has provided new knowledge and competence in urban sustainability. The interdisciplinary core team with representatives from local, regional and national level as well as other participants from civil society, private sector and academia have given opportunities for new collaborations, tools, methods and solutions for the future. The aim of the training sessions has been to improve capacity for urban planning, urban design, urban development and urban management. Stakeholder collaboration and public participation were mainstreamed throughout the activities, along with poverty reduction, gender equality, economic and environmental sustainability. The implementation of the programme has given lessons learnt and knowledge that can be useful to scale up in the future, in Kalaw as well as on national level.

6.1 Future local development in Kalaw

Based on the experiences and lessons learnt from the SymbioCity programme in Kalaw, some important aspects for future local development processes have been identified:

- The most urgent key projects for development of Kalaw where identified to be (i) Heritage strategy and legal framework for managing the balance between development and heritage; (ii) Upgradation and improved infrastructure in the Kalaw Myoma market and 5-days market (iii) Forrest conservation, reforestation, organic farming and increased greenery and parks in Kalaw; (iv) Mobility strategy for improved traffic situation, increased walkability, public transport as well as improved connectivity and trade between urban and rural parts of Kalaw Township (v) Strengthen transparency and inclusiveness in the planning process.
- The broad participation of stakeholders during the training sessions in Kalaw including government officers, staff members from local government agencies, civil society, private sector and academia showed the importance of collaborative processes. The participants got the chance to get to know each other, which led to strengthened coordination among these organizations in urban development activities. The City Profile and Heritage Mapping in Kalaw are both a continuation of this collaboration through local management.
- Tools used during the SymbioCity programme to develop sustainable solutions specifically expressed by the participants in Kalaw as useful were: (i) Stronger collaboration and transparency; (ii)Heritage mapping and analysis; (ii) Social inclusion and equity; (iv) Data-based development and city profiling; (iii) Impact assessments (including environmental impact, cultural heritage impact, social impact, child impact); (iv) Integrated systems; (v) Increased citizen's participation.
- Integration of tools for more participatory processes and involvement of different groups and citizens will give better knowledge of the needs of people. An increased knowledge about the situation of different socio-economic groups and collaboration will be important when planning for i.e. future housing, public spaces, infrastructure provision and forest management so that provided services are reaching out.
- The fact that urbanization will continue globally in the future and the continuous urban population growth in Myanmar further emphasise the importance of sustainable growth, local economic development, linkages between urban and rural areas, development of infrastructure and increased service provision in the town of Kalaw.
- There is a need for technology, finance, social and urban planning as well as coordinated processes to create sustainable and integrated solutions for environmentally, economically, socially, culturally and spatially sustainable towns and cities. Taking a holistic approach to urban systems, considering public health, public safety, water supply, energy, transportation and traffic management, waste management, telecommunications, green areas and public space gives improved sustainability and financial efficiency in project implementation.

- Important aspects of good urban governance, rule of law, transparency, social accountability and participation of civil society are important factors in urban development to serve the best interest of citizens. Laws and policy are also an important institutional aspect to take into consideration to bring about necessary changes in urban governance and management
- Improved decision making need data reliability and accurate data-based planning can encourage more efficient
 and effective expenditure. This can be done through i.e. mapping, GIS analysis and data collection. Jointly
 identified challenges and opportunities, vision and development strategy can guide new projects and
 developments. In order to mainstream data-based planning, local authorities should have common data base,
 and make raw data available so that it can be utilized by disaggregated analysis with different parameters such as
 ward, socio-economic status, age and gender. Particularly, the ward level data base can help more detailed,
 efficient urban service provision and foresee future population growth and increased demands by area/ward. The
 learnings from the City Profile pilot project can be utilised for future processes.
- While much of current legal framework and system of economic governance still relies on the Union Government, there are still some parts where local authorities can take an action to change. Improvement of tax collection, licencing system and fee collection can increase the TDC revenue. This will not only support increased income of TDC but also more efficient land management, clarification of the gaps of registered and non-registered land titles. A more transparent budget process with the municipal budget open to the public will encourage understanding on how the collected taxes are used. Participatory budgeting can be also implemented for some percentages of the budget to reach to the needs of people and engage their involvement in the development of the town.
- Kalaw gets broad attention from development sector, partly because of its rich nature, history and geographical
 potential. The outputs and outcomes of these programme should be shared to utilize produced knowledge.
 A combined list in the common data source with ongoing projects/programmes, planned projects, budget
 from different departments or initiatives from communities would help to avoid overwrapping, and find gaps
 and opportunities, which further enables more appropriate budget or investment allocations. If these processes
 are shared and utilized, some costs can be reduced with more effective outputs.

In addition, the core team proposed some specific activities for how they can take the collaborative work forward in Kalaw:

Kalaw SymbioCity methodology Group

- Training of relevant stakeholders in the methodology of SymbioCity.
- Continue to develop the work with i.e. the heritage strategy and market upgradation.
- Serve to provide ideas and think critically about sustainability in future projects in Kalaw.

Kalaw Pilot Project

- Create a multi-departmental group with the explicit mandate to work on a pilot project, integrating the SymbioCity methodology and tools.
- Implement the proposed projects in the strategy for 2030.

Kalaw SymbioCity Education Group

• The core team could run a short version of the SymbioCity training to relevant target groups.

Kalaw Exhibition in the new Kalaw Cultural Museum

- Develop an exhibition that combines awareness raising and collects citizen's feedback.
- Focus on heritage, climate change and the historic development of Kalaw town.
- Include citizens in the process of envisioning a sustainable and resilient future for Kalaw.
Kalaw heritage mapping

- Finalise comprehensive heritage list and classification.
- Develop a robust heritage strategy of Kalaw.

Kalaw City Profile

- Share learnings from the Kalaw City Profile pilot with other towns and cities in Myanmar.
- Continue to upgrade the methodology and conduct further in-depth studies or surveys to analyses specific issues more in depth.
- Base future decision-making as well as the strategic development of Kalaw on the conclusions from the collected data and insights from the process.

6.2 Town Plan

Based on the work and strategy of Kalaw 2030, recommendations for the development and revision of the Town Plan have been identified.

The Kalaw town plan is recommended to include the following key thematic strategies

- 1. a blue-green infrastructure strategy.
- 2. a mobility strategy that encompasses public transportation, non-motorised modes of transportation, increased connectivity to between rural and urban areas and increased greenery.
- 3. a heritage and development strategy, that clearly balance cultural values and new development.
- 4. a tourism strategy focusing on sustainable tourism with positive impact on environment, society and economy.

Heritage conservation perspective

Heritage conservation was one of the most prominent concerns in Kalaw. Perspectives highlighted in the proposal for Kalaw 2030 is broad and includes both conservation, list creation and definition of heritage zone, guideline development and legal restrictions and by laws. As the heritage related practice itself have potential to make sustainable urban futures, it is crucial to integrate heritage management planning to the town planning. This should be aligned with not only spatial/cultural planning, but also financial aspects to prevent gentrification.

Climate change adaptation

Mainstreaming climate change considerations in the planning process is crucial. The current town planning process and data collection by the authority do not have much aspect to consider climate change.

Make the town plan process more inclusive and inter-disciplinary

The current town plan process mimics the institutional structure of urban planning and governance in Myanmar. The process remains highly centralised and does not effectively include the vast array of stakeholders that make up the socio-cultural tapestry of a town like Kalaw. The town plan process is recommended to include two key elements:

- The process includes a meaningful level of public participation where stakeholders from civil society, the private sector, and most importantly, concerned citizens are provided an avenue to voice their concerns, provide critical feedback, and jointly participate in the creation of a vision for their town.
- The process includes both elements of greater horizontal cooperation, between departments, ministries, and agencies at the same level of governance, and greater vertical streamlining between stakeholders at the township, state/region, and union levels. Interdepartmental collaboration yields better outcomes, lowers cost, and generates innovative ideas

Take issues of poverty and gender in urban planning into account when developing the town plan

In order for Kalaw to develop in an inclusive and sustainable way, that takes consideration of different needs, independently of gender or socio-economic group, it is important to recognise that different groups have different needs and perceptions. Currently the town plan lack information about vulnerable populations including ethnic minorities and informal settlements. As a result, the current planning process has a risk of excluding these populations. It is important to understand their livelihood situation both from people and authorities' sides. This can be supported by community-based survey and focus group discussions with an appropriate adjustment depending on target population such as language, size of discussions and authority's direct involvement. In Kalaw, key stakeholder interviews, consultations and analysis by the core team gave clear indications on differences in access to space, resources and services between different groups, marginalized communities as well as between informal and formal sector.

Pay attention to issues of social inclusion

Issues of social inclusion of marginalized groups as well as people living with disabilities has been highlighted during the programme. Planning with different types of abilities and disabilities in mind will make cities more inclusive and functional to more people. This is linked to for example design of and access to markets, roads, public transport, seating places.

The town plan must rely on more accurate data for planning

Local data is a crucial component in understanding the reality of the town and making informed planning decisions based on knowledge and facts. Improved tools for data collection, analysis and joint decision making is recommended for the future town planning process. Several participants highlighted the importance of new tools such as GPS mapping, walk through evaluations, primary data collection, traffic analysis as important means for future planning.

Include integrated planning solutions that can create synergies

Integrated planning solutions can create synergies among urban systems in order to reduce both impacts and costs. All urban systems planning in Kalaw should consider both strategies and integrated solutions based on inter-system synergies, to enhance efficiency and reduce costs. Institutional arrangements that support inter-functional collaboration should be developed. In the strategy and proposal for Kalaw integrated solutions are developed that connect the specific thematic areas to a set of environmental, economic, and socio-cultural factors. These factors are: buildings, urban functions, public space, landscape & ecosystems, waste and materials, water and sanitation, energy and ICT.



Figure 55: Integration of solutions for urban systems

Town Plan process considers sustainability perspectives and impact assessments

Further impact assessments and inclusion of all dimensions of sustainability (socio-cultural, economical and environmental) in the town planning process and plan would enable a long-term positive development in Kalaw and both inform and support conscious decision-making.

6.3 Implementation of the National Urban Policy

The National Urban Policy for Myanmar is under development and will act as an umbrella policy to existing or proposed national policies and will form direct policies to address specificities within the urban sector. Based on the lessons learnt from the implementation of the SymbioCity Programme in Kalaw, the following recommendations have been developed for the implementation of the NUP:

1.Small and medium cities/towns

Apart from the three big cities of Yangon, Mandalay, and Nay Pyi Taw, most of the country's urban population lives in small towns. The challenges, opportunities, and capacities of small towns are often markedly different from bigger cities in the country which demands a recognition of tiered solutions. This regards the aspect of balanced regional growth, economic development and infrastructure provision.

2. Large rural population residing within "town" jurisdictions

The majority of "urban" centres in Myanmar, still contain a predominant rural population, however the development indicates that these townships will be the core of future urbanisation processes. Significant emphasis must be placed on understanding the urban-rural linkages within townships and the potential conflicts, challenges, and opportunities that arise with urban growth.

3.Gender and urban planning

Gender representation is acutely missing from the political and administrative systems of Myanmar. For instance, a recent Asia Foundation study finds that only 101 of the 16,829 Ward/Village Tract Administrators are women. The work and analysis in Kalaw shows serious inadequacies in the existence of and access to public space, access to services, and safety and security of women. The different needs of women and other gender minorities will therefore be important to address with growing urbanisation.

4. Democratic participation

Participatory process involving citizens and local communities must be made a mandatory part of the town planning process and in the development of other urban projects. In addition, increased transparency and openness in urban development projects is crucial. The current status of environmental and social impact assessments is crucial to analyse for improved processes and results and to make the process of urban growth as transparent, democratic, and equitable as possible.

5. Decentralisation of governance

A roadmap for greater decentralisation of power to the townships, both fiscal devolution and devolution of responsibilities under the constitution is important. In the longer term, this roadmap must seek to transfer power completely to an elected body at the township level. TDC/CDCs have come to occupy central positions in urban governance and development and must be further empowered and capacitated to take on a larger role and fully redeem their constitutional potential. The implementation of the NUP should build on the promise of cities that are democratically governed and managed.

6.Informal settlements

The challenges of informal settlements are needed to be addressed by pointing to sustainable solutions including participatory in-situ upgradation, increased provision of affordable housing and public housing solutions that are affordable and with availability to infrastructure, social connections the original living area and access to livelihood. Community-based forms of saving and credit system should be introduced to sustain housing and livelihood for vulnerable groups. The rights of the citizens should be in the centre of development.

7. REFERENCE PROJECTS

During the Capacity building programme in Kalaw, some specific projects of reference from the study trip to Stockholm, Sigtuna and Uppsala were pointed out as important references by the core team for the future development of Kalaw.

7.1 Sigtuna heritage conservation strategy

Sigtuna is the first city in Sweden and slowly began to emerge in the shift between Viking times and medieval times. It was built at its present location around 980. Historically, Sigtuna has been a very important city in Sweden. Because of some common aspects to Kalaw such as the small scale, tourism and heritage, the participants learned and explored possible ways of working with heritage in Kalaw.

All ancient monuments, older churches and state and individual building memories are protected by applicable laws. Eleven buildings and facilities are explained as building memories. Eight geographical areas are designated as national interest areas for cultural environment, which corresponds to about one quarter of the municipality's area. Gentle development can take place provided that existing values are not compromised. Only actions that are adapted to the national interest value description can restrained from getting into implementation.

The historical heritage is an asset for urban development that can be functioned at the three level; national, county and local.

- In national level, the Swedish National Heritage Board is responsible for World Heritage Sites and other heritage. This is governed by the Ministry of Culture. Another national level body called National Property Board of Sweden is responsible for managing the real property which are owned by the State. This is organized by the Ministry of Finance.
- In country level, country administrative board and country board have the responsibility of heritage, including county level museums
- In local level the municipality have the mandate for protection, conservation and maintenance of heritage as well as local museums. The Local Development Plan is the most used way to protect buildings and a Cultural Heritage Program constitutes a guiding knowledge base.

After 1945 many old city centres were modernized with the negative outcome that old heritage buildings were demolished. Therefore, Swedish National Heritage Board came up with heritage conservation plan through classification and information by listing buildings and zoning for certain areas. The Local Development Plan is used most frequently to protect buildings by putting descriptions with pictures and detail of regulations for both private own and state own buildings. The detailed plan is needed for much smaller area. This usually aims to regulate development or redevelopment. The plan should reflect the development plan and requires consultation to be approved. Once it is adopted, the plan has legal binding power.



Figure 56: Example of heritage map in Stockholm with categorization which enables to develop conservation plan and zoning.

Managing the Built Cultural Heritage

Streets





1. Description

2. Value bearing properties



Value bearing Properties 1 De opsinde funeries schelingerie genoe. Sin houde is, oct saming at a sipelijele tedeforaiserer som is realister is automating in and und. Vanzou or (poss invest on it namatilitagede funder genoti houd in streng soliton och genos pattare som pri belter i generstheisige, och kland men mellenen beacht met Strengelichen

Figure 57: Example of list of built cultural heritage. The format has universal and clear information- description, value bearing properties, guideline- which can be continuously used for the future as well.

Although Myanmar does not have such decentralised system and rich planning capacity like Sweden, there are some points which can be learnt from heritage conservation and promotion by Sigtuna as follows;

- Protection of heritage buildings by applicable laws.
- Regulations to building owners in tearing down their buildings without permissions.
- Local development plan including value description with pictures and details of regulations.
- Small story telling functions in every corners of the streets (such as old telephone boxes, historical signs with stories, specific original objects) which encourage visitors to explore more.



Figure 58: The old main street of Sigtuna is very popular and most of the buildings in this street are from 18th century. The Sigtuna municipality has preserved the street during thousand years including building, street scale, and small gardens in the backyards. The core team of Kalaw had a guided heritage tour around the city's main natural and built heritage value areas.

7.2 The Stockholm Room

The Stockholm room is a staffed interactive information centre, where the city of Stockholm displays how and why the city is growing. The aim is to create understanding as well as curiosity around the possibilities and challenges that face a growing Stockholm and works like a communicative channel to display the city's work regarding city development. The Stockholm room is a physical representation of the website https://vaxer.stockholm, a site that contains information about every planned and ongoing city development and construction project in Stockholm.

The space is located just on the corner of central station which allows many visitors to drop in. A part of the room is dedicated to theme exhibitions. For these types of exhibitions, the Stockholm room invites the city's administrations and companies to create a theme exhibition regarding an area of city development they are specialized in. The purpose is to provide space for more of the city's work to be showcased, but also to lift aspects of urban planning that are not always self-evident. The Stockholm room had for example had a theme exhibition about children and urban planning - how to consider children and their rights when planning a city. The theme exhibition changes every three months. The room has a 3D city model of Stockholm on the floor, interactive digital screen of the city and infographic displays with photos, videos and diagrams. The space also has a small bookshelf, seating spaces mainly for some events but also for those who wants to read or rest. In addition, with large entrances and glass walls to the station facilities, its open spatial environment allows various people to stop by. The mission of the Stockholm room is to provide information in order to increase understanding and awareness about urban planning and the growing process of the city. The organization around the Stockholm room, such as financing and higher management, is a cooperation between several of Stockholm's administrations.

This is a good example to showcase about the city to the visitors and also for residents to increase awareness, understanding in planning and provide a space for discussion. Some specific points relevant for Kalaw:

- Located in the most central part of the city where it can attract more people.
- The space is located in the cultural house of Stockholm and have a very open façade with the exhibition is visible from the outside.
- Interactive tools can easily be updated with new data and projects in Stockholm.
- Seasonal exhibitions and thematic contents.
- Space for discussion and rest so people also can share their opinions about development in the city.
- Visible 3D model of the city on the floor under the glass so that visitors can see new projects in relation to existing city. It stimulates discussions and is a good tool for analysis.



Figure 59: The 3D model of Stockholm provides an overview of the city as well as new planned city development projects.

7.3 Dansbana!

Dansbana! is an organisation working to create public places for dance. Planned spaces for outdoor activities such as football fields or skateboard ramps are primarily used by boys, some up to 90 %. Girls are heavily underrepresented as users of public spaces and Dansbana! was created out of a desire to change that. All ages enjoy dancing but it is particularly popular among young women. The vision was to create public dance places together with them. The uniqueness of this initiative was in its participatory process with girls in collaboration with local dance organizations. The project was planned and designed together with a group of young girls, with frequent interviews to wider target groups and detailed assessment including pilot initiatives. This was carried out by providing a toolkit of mat, speaker and costumes to see where they can feel comfortable.

The name comes from an old building type for dancing in Sweden, 'Dansbana'. They were important social spaces, especially for young people. Girls and local dance organisations were engaged in the planning and activation of each Dansbana! So far three Dansbana have been built in different parts of the Stockholm Region.

This is a good example to promote creating gender-sensitive public space. Followings are the specific points which relevant for Kalaw:

- Participatory design process: The project team worked together with target groups (girls) to design the space.
- Pilot test and feedback: The plan is not enough. The team made pilot space and experience together with target groups, because imagined scenario and actual experiences are always different. This helped to improve the plan and maintain the quality.



Figure 60: The visited Dansbana in Stockholm with dance floor and red iconic speaker boxes.

7.4 Stockholm Royal Seaport

Royal Seaport is a large area of central Stockholm that is undergoing brownfield redevelopment. The area runs along the waterline of the Baltic Sea, lies next door to the Royal National City Park and is just ten minutes away from central Stockholm by bicycle. The industrial site around the gasworks area will be transformed into an urban district that interacts with port operations and the existing residential areas. The Stockholm Royal Seaport area will feature the cha¬racteristics and density of an inner-city neighbourhood, with a broad mix of homes, amenities and businesses, as well as strategic infrastructure and international port traffic. The overall objectives for Stockholm Royal Seaport is to meet the city's growing housing needs and to be a model for sustainable urban development. This is done by converting former industrial land into an attractive and vibrant neighbourhood with at least 12 000 flats and 35 000 new jobs where innovative environmental technologies are promoted. More than 600 companies are established in the area. More than 2,100 new housing units are now occupied and added to the existing residential area of 1,600 households. Approximately 5,100 housing units have been appointed to 51 developers, but more than half of the development is still to be planned and appointed. The district will be adapted to future climate changes. The process of Royal Seaport started in connection with Stockholm City's Vision 2040.

In 2009, the Stockholm City Council decided that Stockholm Royal Seaport would be designated area with an environmental profile. These efforts were guided by following four principles. 1. A vibrant city focuses on how the physical environment promotes a dynamic, attractive urban environment. 2. Accessibility and proximity refer to a dense and accessible city, where effective long-term solutions contribute to resource efficiency and climate responsibility. 3. 'Let nature do the work' describes how greenery can help to create a robust and pleasant environment, while also fulfilling several other functions. 4. Participation and consultation stimulates motivation and a connection with the place.

The Stockholm City Development Administration manages the Stockholm Royal Seaport project in close collaboration with other administrations, primarily the Planning Administration, Traffic Administration, Environment and Health Administration and the District Administration. The project is partly financed through sales of land or site leasehold fees. One of the prerequisites is broad political support, with their aspiration to continue to be recognized as a leader in sustainable urban development. The project organisation is interdepartmental. The aspect of sustainability builds on thematic groups with experts from the City's administrations and municipal companies, creating joint responsibility and making it easier to share best practices. The task of the thematic groups is to break down the targets into binding requirements and to identify any need for feasibility studies and R&D projects. The City specifies requirements for the design, production and management of buildings, as well as for its own projects.

Relevant aspects for Kalaw:

- A good example of large-scale project to conserve and promote the identity of the city and at the same time respect heritage values.
- The Royal Seaport was positioned as one of the core strategic project in Stockholm City's Vision 2040 as a model of sustainable development. This encouraged all the support from different sectors, political support and specialists.
- The interdepartmental planning team made it easier to share the best practices and come up with realistic joint decisions. The project was designed by different thematic groups with experts from different sectors.
- Spatial planning with integration of historical, architectural, natural and social values gives an important environment in the neighbourhood
- Use of materials such as brick façades, masonry arches reflects the area's industrial history in different parts in the area.



Figure 61: The redevelopment project has tried to carefully preserve the industrial heritage of the area. Drawing from the industrial history of the site, several buildings feature concrete ramps and rustic wooden floor treatments and have clad with brick facades and masonry arches to frame the street level to showcase an identity for the community. The unique character of the Gasverket where the city's gas grid was once produced has been preserved.



Figure 62: The urban environment has been designed with a clear division into areas with various degrees of public access. As a rule, entrances face public streets and places. Courtyards therefore have a private or semi-private character. The design of the area has been done with a pedestrian perspective in mind. The district is adapted to handle future climate changes as well as safeguarding biodiversity and ecological values.



