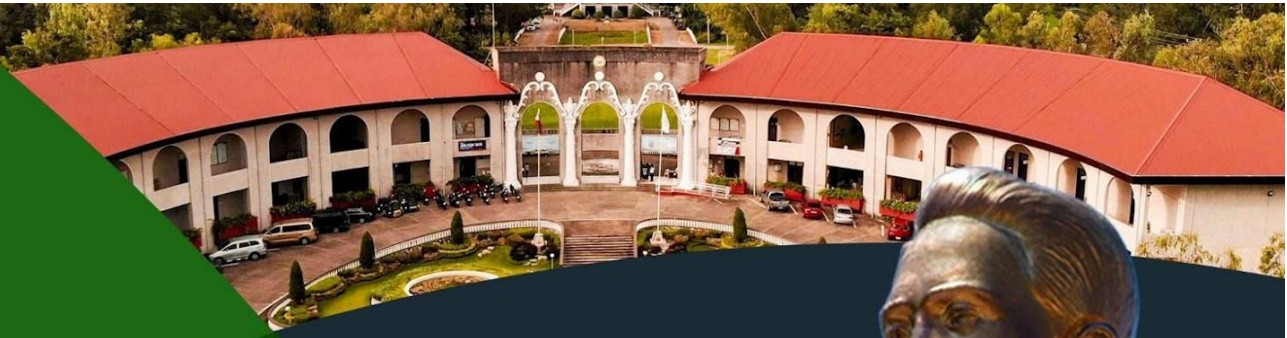

MMSU SIRMATA 2040 LAND USE DEVELOPMENT AND INFRASTRUCTURE PLAN (LUDIP)

VOLUME 1 : UNIVERSITY PROFILE

FOREWORD

On behalf of the Mariano Marcos State University (MMSU) Family, I am pleased to present the Sirmata 2040: MMSU's Land Use Development and Infrastructure Plan (LUDIP), pursuant to Republic Act 11396, or the "SUCs Land Use Development and Infrastructure Plan Act of 2019". This document reflects the University's commitment to optimize the utilization of our existing land and infrastructure resources in the pursuit of our mandate and aspirations, with the goal of establishing a resilient and future-ready University, characterized by:

- Safe, secure and liveable environment
- Institutionalized standards of infrastructure design
- Resilient infrastructure responsive to evolving needs
- Modernized facilities aligned with world-class standards
- Aggressive development of landholdings for improved productivity
- Thorough physical planning and efficient implementation
- Aesthetic and culturally-focused campus

Sirmata is more than just a blueprint of the University's future. Rather, it is a testament to its history. It connects present and future developments with the seminal hopes that brought MMSU into being more than four decades ago. Likewise, it documents the steps we took, collectively and individually, to formulate a plan that would clearly embody our aspirations.

The process of making the LUDIP has been a difficult yet crucial step in our long-term efforts to fully consolidate and develop our land resources. Along the way, we encountered – and continue to encounter – challenges, especially considering that as of this writing, a significant number of lands under the stewardship of the University are yet to be titled. The geographical and socio-economic conditions of our campuses also made planning more painstaking, as we needed to come up with plans that address varying needs and demands.

Moving forward, we have to take aggressive steps to implement the strategies that we have outlined in this Plan. I invite every member of the university community to take the Plan to heart, and to contribute to its realization. Let us all work together to make *Sirmata* an integral part of MMSU's history.

SHIRLEY C. AGRUPIS, PhD
University President

TABLE OF CONTENTS

DEVELOPMENT CONSTRAINTS

Development constraints refer to the human, fiscal, physical attributes and natural resources that limit or inhibit the attainment of the goals of the LUDIP.

Relevant aspects of planning that constrain development or provide opportunities for development were also considered, such as the laws and policies affecting land use planning, environmental management, and the geophysical and socioeconomic characteristics of the respective cities or municipalities where the campuses are located.

Following are the general constraints that affect the overall formulation and implementation of the University LUDIP:

Geo-physical and Ecological Factors

- **Natural hazards.** Due to their geographic locations and characteristics, the various campuses have varying degrees of susceptibility to natural hazards and disasters, especially the frequent typhoons that visit the province. Other common hazards are earthquakes and ground shaking. The Currimao campus is also susceptible to storm surges. Overall, the campuses have limited access to early warning system during storm surge and flooding
- **Topography and slope.** Different topological conditions of the campuses and their location account for varying forms of development. Development initiatives are less difficult to pursue in the relatively flat areas, which are not hampered by large amounts of investment costs for physical development.
- **Climatic conditions and climate change,** which pose risks to especially to vegetation. There is a limited number of climate proof holding facilities in the campuses.
- **Environmental degradation.** The increase of program offerings and consequently increase of students and personnel of the university will inevitably increase utilization of resources inside and within the campus, which may have impacts on the environment. Balance on the utilization of resources may be handled though implementation of green energy/buildings, pollution control policies, and clean energy sources.
- **Vulnerable soil type** along the seashore and riverbank
- **Inadequate drainage facilities and water ways** in the campus especially during rainy season
- **Increasing volume of waste produced** and limited facility for waste management.

Socio-economic and Political Factors

- High investment cost / cost of infrastructure inputs
- Budget / funding priorities of the government
- High cost of production to sustain income generating projects and activities
- Limited facility to process and store production
- High cost of production inputs
- Land use for agriculture

With the increase on the area footprints of the structures or buildings to be constructed, there is a potential trade-off between allocation for agricultural and academic uses. However, the required areas for experiment and laboratory purposes shall be maintained in accordance with the policies, standards, and guidelines of specific programs as well as developmental projections.

- Budget availability

  The University derives its budget for capital outlay from the national government. Construction and development projects are funded through capital outlay except those that are provided/allocated funds from income and external donors. Hence, development is potentially constrained by budget allocation and release.

Policy and Guidelines Constraints

The development proposals must conform to legal bases of land use and development, as well as documents, laws and issuances that seek to provide measures to protect and conserve particular areas and to ensure sustainable growth.

These policies and guidelines include:

1. **Republic Act 7586 (National Integrated Protected Areas System Act)** and its Implementing Rules and Regulations. This Act provides for the management, protection, sustainable development, and rehabilitation of protected areas to ensure the conservation of ecosystems and biological diversity, and maintain and enhance their natural conditions was referred to in the formulation of plans concerning environmentally critical areas.

2. **Republic Act 7279 (Urban Development and Housing Act of 1992).** This Act provides for the implementation of comprehensive and continuing urban development and housing programs to uplift conditions of the underprivileged and homeless citizens in urban areas and in resettlement areas, and optimize the use and productivity of land and urban resources.

3. **Presidential Decree 1586 (Environmental Impact Law).** This Law provides for the establishment of the environmental impact system in the pursuit of comprehensive and integrated environmental protection program. It mandates that an Environmental Compliance Certificate be secured from the DENR for all environmentally critical projects and projects in environmentally critical areas.

4. **Presidential Decree 1067 (Water Code of the Philippines)**. This Code provides for the protection of waterways and the observance of easement regulations in the physical planning of a municipality.

5. **Presidential Decree 856 (Sanitation Code of the Philippines).** This Code is considered in studying the location of development proposals having impact on health and sanitation.

6. **Presidential Decree 1151 (Philippines Environmental Policy Decree).** This decree provides for the ensuring of consistency of development proposals with the environmental policies.

7. **Republic Act 8371 (The Indigenous People's Rights Act).** This decree provides for the protection of indigenous people's rights to ancestral domain, and to consider their individual rights, culture and practice in planning.

8. **Republic Act 9593 (The Tourism Act of 2009).** This Act provides guidelines in planning for tourism-related endeavors.

9. **Presidential Decree 1152 (The Environmental Code of the Philippines).** This Code established specific environment management policies and prescribed environmental quality standards.

10. **Republic Act 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990).** This act seeks to control, supervise and regulate activities on toxic chemicals and hazardous waste.

11. **Republic Act 8749 (Clean Air Act of 1999).** This Act provides for a Comprehensive Air Pollution Control Policy and for Other Purposes.

12. **Republic Act 9003 (Ecological Solid Waste Management Act of 2001).** This Act provided for an Ecological solid waste management program, creating the necessary institutional mechanisms and incentives, declaring certain acts prohibited and providing penalties, appropriating funds therefor, and for other purposes.

13. **Republic Act 9275 (Clean Water Act of 2004).** This Act provides for **a** Comprehensive Water Quality Management and for other Purposes.

14. **Republic Act 11396 (SUCs Land Use Development and Infrastructure Plan (LUDIP) Act).** This Act requires state universities and colleges (SUCs) to prepare and implement a Land Use Development and Infrastructure Plan that shall include the construction of dormitories for students and housing sites for employees.

Other Constraints

- **Issues on land holdings and titling.** Since a significant number of MMSU's landholdings are not yet registered under the name of the university, there may be limitations as to development in some areas.

Potential direct and indirect impacts of global / national / regional and provincial plans and targets

The MMSU LUDIP is a key link in the network of plans covering development projections in the global, national, regional, and local levels. It is vertically aligned with the Sustainable Development Goals (SDGs) at the global level; the Ambisyon Natin 2040 at the national level; the Ilocos Regional Development Plan 2017-2022 at the regional level and the Provincial Development Plan and Physical Framework at the provincial level. The plan is likewise linked to the Comprehensive Land Use Plan and other developmental plans at the city and municipal level. At the same time, it is informed by the institutional Vision, Mission, Goals, and Objectives of MMSU. Hence, the LUDIP serves as an integral link between MMSU's physical development objectives on one hand and, and the regional and national priorities on the other.

Development programs, projects, and activities detailed (PPAs) in the LUDIP are the bases for a multi-year infrastructure and investment

program, which consists of the prioritized list of PPAs with cost estimates. This serves as reference for budgetary allocations for the PPAs.

The 17 SDGs are dovetailed with the national, regional, provincial and city / municipality plans in order to determine their potential impacts and implications on the MMSU LUDIP. On the other hand, the potential impacts of the implementation of the LUDIP on the attainment of the development targets are also crystallized.

In harmony with these goals, the national and regional development targets are anchored on the Ambisyon Natin 2040 (Matatag, Maginhawa, at Panatag na Buhay). These aim to promote social and human capital development and strategic infrastructure development; reduce the vulnerability of individuals and families; build safe and secure communities; ensure ecological integrity; and stimulate creativity and innovation. The RDP specifically prioritizes sectors with greatest potential in realizing the national goals, including manufacturing (food processing) and agricultural development.

The current provincial vision is "Narimat nga arapaap, intay' amin maragpat!" (A brighter future, we call achieve!):

Aligned with these goals, the provincial development plans and targets emphasize anti-poverty programs; expanding opportunities in the agriculture, forestry, and fisheries sector; continuing assistance to farmers and fisherfolks; promotion of trade and industry for increased income; social welfare and services development; accessible healthcare; efficient management of environment and natural resources; promotion of public safety; organized transformation; investment and job creation; and tourism development. In particular, economic zone development is pursued as part of the growth strategy of the province and the region. Intensified waste management and renewable energy development are emphasized toward sustainability.

To ensure complementation with these goals, sustain collaboration with the community, and achieve the development goals of the campus, it is necessary that strategies must be incorporated in the LUDIP that will address key concerns on:

1. providing adequate land, infrastructure, and facilities that will promote human capital development through education, and values and technical skills development;
2. supporting the expansion of the health sector in the province;
3. utilizing land and facilities to promote productivity and food sufficiency in the agriculture, forestry, aquatic, and natural resources sectors;
4. ensuring the efficient management of natural resources in the campus;
5. creating opportunities for industrial development, job creation, and investment;
6. incorporating climate change mitigation and disaster risk management strategies in the design and utilization of land and infrastructure resources;
7. aligning the MMSU LUDIP to the development concept, structure, and strategies of the national, regional, and provincial / local goals.

Appendix 4 presents a detailed analysis of the implications of the alignment of higher-level plans and the MMSU LUDIP, and how the LUDIP strategies cohere to these plans and targets.

CAMPUS PLANNING FRAMEWORK

Guiding Principles of the MMSU LUDIP

The MMSU LUDIP is anchored on seven themes that influence the preparation of the Plan. These guiding principles take into consideration the wide and variable scope of the University's programs, stakeholders, and resources, all in the context of its vision.

1) **Academic Excellence and Global Competitiveness.** As an academic institution, MMSU upholds the primacy of Academic Excellence and Global Competitiveness as a guiding principle in the planning process. Toward this end, the LUDIP is meant to ensure that physical planning shall put prime importance on resources needed to upgrade the quality of instruction to level up with international standards, equip students with global mindsets and competencies, and enable a learning environment that is on a par with leading institutions in the world.

2) **Innovation and Community Engagement.** MMSU is actively engaged in research, development, and extension. The LUDIP serves to ensure that physical resources are available for the conduct of studies, development of innovations, and transfer of technology to the community. Toward building an innovation ecosystem in the North, MMSU shall serve as a hub, bringing together innovators, technology developers, and investors for the development and commercialization of novel ideas and inventions. Community engagement is also realized through the involvement of internal and external stakeholders in the planning process.

3) **Optimal Management of Resources.** The LUDIP encapsulates the University's plan for developing its land assets, to the extent possible, toward increased profitability and viability of its Income Generating Projects. It shall support its resource generation and revenue management initiatives toward improved financial performance.

4) **Vibrant, Engaging, Culturally-Focused Campus Life.** MMSU is envisioned as a vibrant and engaging space for all University clients and constituents. The LUDIP shall foster the development of an MMSU brand incorporating elements of Ilokano culture. This brand shall be evident in the aesthetic characteristics of buildings and landscapes, design of which shall be complementary in terms of massing, color palette, materials, style, density, green space and other important current components, melding form and function. Accessibility and inclusiveness are also key considerations.

5) **Sustainability and Resilience.** The LUDIP adheres to relevant laws and regulations to ensure that buildings and facilities are sturdy and resilient, and building practices are lawful and equitable. It incorporates the principles of green building technology and environmental planning to promote sustainability and resiliency in the design and utilization of built environments and open spaces, and promote overall environmental care and protection. Hence, plans conform to existing local codes, and policies and regulations on land use, zoning, and waste management. The integrity of the

existing biodiversity and natural systems is likewise maintained. The LUDIP shall also inform the measures to be put in place to ensure safety and security.

As a general rule, all trees that are going to be cut shall have the appropriate tree cutting permits and will be replaced following the prescribed ratio of 1:100 for naturally-growing and 1:50 for planted trees. Planting sites shall be identified for the replacement trees in accordance with the National Greening Program and the Campus Development Plans.

6) **Connectivity and Operational Efficiency.** Facilities shall be used efficiently and effectively in support of overall University goals and education delivery. Connectivity shall be improved through the provision of road networks and utility (Internet, electricity, water).

7) **MMSU of the Future.** The overarching theme of the LUDIP is the illustration of the ideal MMSU of the future. Hence, the LUDIP is based on projections in the growth and expansion of University programs in the context of continual improvement, vis-à-vis projections of the needs and developments in the local, national, and international scenes. The LUDIP shall be an integral component of MMSU's design to be a Smart University through Industry 4.0 technologies.

The LUDIP planning principles are translated into general strategies that shall be incorporated in the campus-level land use development and infrastructure plans.

Table 11. LUDIP Planning Principles

Principles	Strategies
Academic Excellence and Global Competitiveness	Design and furnishings of academic buildings Expansion plans for campuses Increased classrooms and laboratories Facilities for flexible learning Responsiveness to policies, standards, and guidelines of academic programs
Innovation and Community Engagement	Mapping of research and extension (techno-demo) areas Utilization of landholdings and facilities for Research and Extension purposes Collaboration with LGUs and communities Laboratories
Optimal Management of Resources	Mapping of lands for production Design of Business infrastructure Efficient monitoring of project implementation
Vibrant, Engaging, Culturally-Focused Campus Life	Establishment of the MMSU Village and Residential areas Establishment of parks and open spaces Design of function halls Provision of comfortable comfort rooms Ilokano-influenced design
Sustainability and Resilience	Integration of Local CLUPs Adherence to the National Building Code Hazard Mapping Green buildings and technologies Walkways and bike routes Waste management facilities Disaster risk reduction facilities Replacement of cut trees

Principles	Strategies
Connectivity and Operational Efficiency	Ease of access Multimodal transportation Utility infrastructure
MMSU of the future	Physical projections Demographic projections Alignment with the MMSU Vision Smart Campus MMSU 4.0

Planning Processes

The formulation of the LUDIP followed various stages. These are outlined in Figure 13.

1) **Preparation.** This stage involved the initial steps in preparing for the LUDIP, such as the conduct of Strengths, Challenges, Opportunities, and Threat (SCOT) and Political, Economic, Social, Technological, Legal, and Environmental (PESTLE) analysis, and review of previous and existing plans. Committees and working groups were also formed, as well as the specific targets and timelines for each group. Relevant issuances such as laws and guidelines were also reviewed.

   Based on the review, the themes, goals, and objectives of the MMSU LUDIP were formulated toward the establishment of the LUDIP terms of reference.

2. **Brainstorming.** A series of consultations and workshops were done, which also involved the review of documents, including the Comprehensive Land Use Plans of the respective LGUs. The potential direct/indirect impacts of proposed national/ regional/ provincial plans and targets were also analyzed. Data were also derived from inventory of landholdings, land ownership and land use, including potential conflicts, as well as joint workshops among different groups of stakeholders.

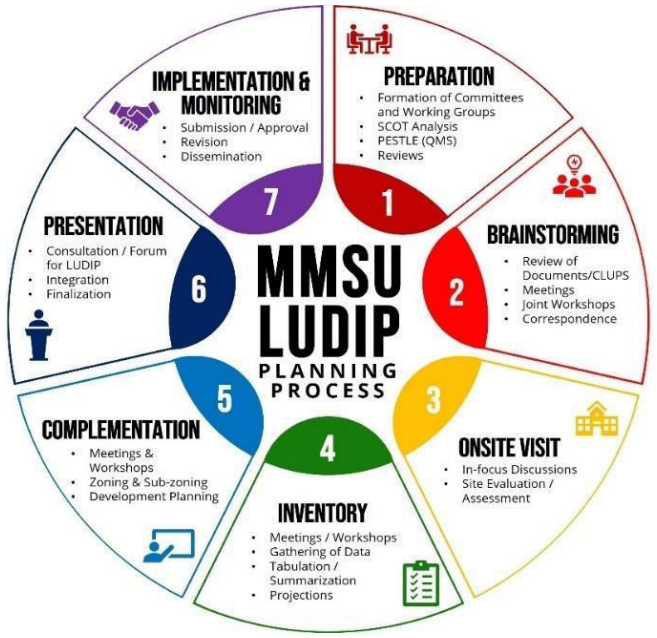

Figure 13. LUDIP Planning Process

3. **Onsite Validation / Field Visits.** The LUDIP Team conducted on-site visits to the different campuses. These visits include site evaluation and assessment to determine natural and man-made hazards, suitability of the land for specific uses, and the needs of adjacent communities, among others. and in-focus discussions in each campus. In-focus discussions were also conducted as part of the campus planning process.

4. **Inventory.** Continuous data gathering and processing ensued through consultations, interviews, and documentary analysis. University and campus-wide sectoral studies and profiling were done, taking into consideration environmental and socio-economic factors.

5. **Complementation.** Based on the demographic projections, physical development thrusts were formulated, which became the bases for the finalization of the land use, zoning and sub-zoning plans and the overall campus development plans.

6. **Forum.** After the initial plans were drawn, these were presented to both internal and external stakeholders. The LUDIP for each of the campuses was also presented to the concerned LGU to ensure alignment and complementation. The plans were revised incorporating the comments and suggestions of the different stakeholders.

7. **Staging.** This phase involves the approval, dissemination, and revision of the LUDIP, as well as the packaging and publication of the approved LUDIP.

Planning Considerations: Existing and Future Opportunities and Threats

Planning considered the various strengths, weaknesses, opportunities, and threats in mapping out the LUDIP.

1. **Strengths.** These refer to internal factors that are helpful or beneficial in the planning and implementation of the LUDIP. Identified strengths include the University's resources for development such as its vast landholdings; available funds; technical professionals; and development-oriented management and personnel. MMSU also has a good reputation in the community, and a Strategic Plan that can serve as a holistic blueprint for development.

2. **Challenges.** These are the internal factors that can have harmful implications on the LUDIP. These include the status of land titling / ownership of a big number of lots; water quality in the campuses; as well as that status of some of the buildings and facilities. Some of these facilities are already old and need to be replaced / refurbished.

3. **Opportunities.** Opportunities refer to the external factors that are beneficial to the LUDIP. These include MMSU's functional partnerships with HEIs, government, and non-government agencies from which funding can be derived for facilities improvement. Also, the LGUs in which MMSU campuses are located are also showing growth and development, which can impact MMSU as well. Two of the LGUs have updated CLUPs.

4. **Threats.** These are external factors that can have negative effects on the LUDIP. These include the old / incomplete CLUP of Currimao and Laoag; the frequency of destructive typhoons; and the performance of some infrastructure contractors that can cause delay in the implementation of projects.

Table 12. SCOT Analysis Results

	Helpful	Harmful
Internal	**Strengths** • The university has regular GAA and Income which can be used for development • The Batac, Currimao, and Dingras campuses, including off-campus locations in Batac, have vast space for development • The university has technical professionals to plan/design/monitor CLUP related activities • Development-oriented management and personnel • Increasing reputation of the university in the community. • The university has an approved strategic plan/midterm and long-term roadmap	**Challenges** • Water quality in the campuses • Land titles/transfer of ownership not yet complete • Limited accommodation for projected scholars/top-notch personnel • Old buildings • Incomplete facilities • Not fully gated and fenced
External	**Opportunities** • The University has existing partnerships with other HEIs and agencies • Funding institutions (CHED, DOST and the like) are available for facilities/infrastructure support • The local government units are available to partner with the university • MMSU alumni can be tapped to help the university develop its facilities. • There are industries/other institutions that can be tapped for various purposes (i.e., for commercialization of technologies/building of industries, funding of researches and infrastructure as well as experts) • Growth and development in the city / municipality / province • Educable communities - Openness of the community/LGUs to partner with MMSU for education and training opportunities • Existing and updated Land Use Plan for Batac and Dingras	**Threats** • Old / incomplete land use plans for Currimao and Laoag • Frequency of typhoons in the province may threated infrastructure • Performance of infrastructure contractors • Effects of Climate change • Change in priority projects of the national government