

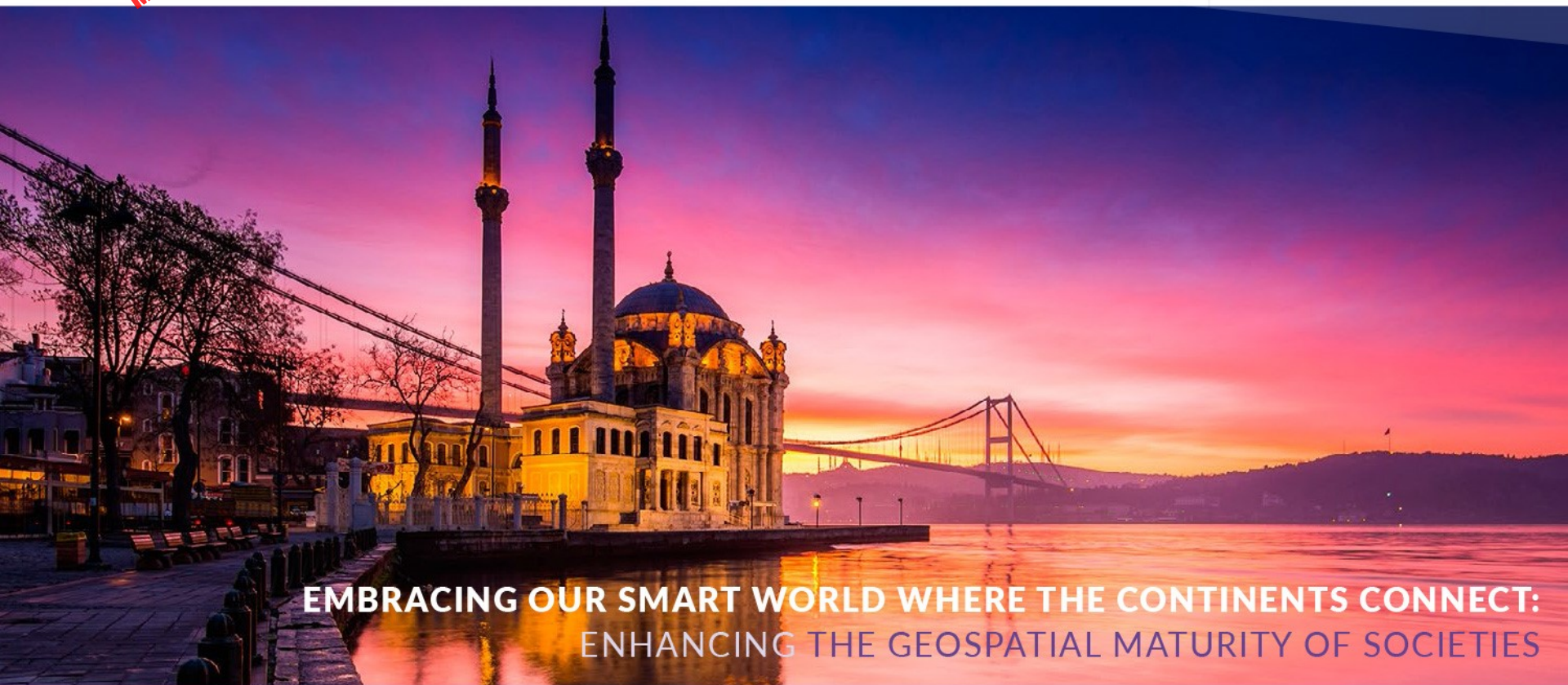


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**EMBRACING OUR SMART WORLD WHERE THE CONTINENTS CONNECT:
ENHANCING THE GEOSPATIAL MATURITY OF SOCIETIES**

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Education for Spatial Planning and Design: Integrating Surveying and Mapping Sciences as a Foundation

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PRESENTATION OUTLINE

- ❖ **Introduction**
- ❖ **Brief Information about Ghana**
- ❖ **Importance of Spatial Planning**
- ❖ **Challenges of Spatial Planning in Ghana**
- ❖ **Inadequacies in Skill Development**
- ❖ **Relevance of Integrating Surveying and Mapping Sciences in Spatial Planning and Design Programme at UMaT**
- ❖ **Planned Growth, Direction and Impact of the Programme at UMaT**
- ❖ **Conclusions**

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INTRODUCTION

- ❖ Spatial planning refers to the methods and techniques used by policy sectors to influence the distribution of people and activities in spaces of various scales (local, regional and national) in order to improve the built, economic and social environments of communities (Koresawa and Konvitz, 2001).
- ❖ This implies that through an effective coordination of sectoral policies, spatial planning can help ensure the even distribution of economic resources within the country that would have otherwise not been achieved.
- ❖ According to Cullingworth and Nadin (2006), spatial planning embraces the task of integrating the economic, social and environmental dimensions of national, regional and local-level strategies with the ultimate goal of ensuring that development outcomes are feasible and sustainable.

INTRODUCTION Cont'd

- ❖ On other hand, spatial design or urban design involves the arrangement and design of buildings, public spaces, transport systems, services, and amenities.
- ❖ It is the process of giving form, shape, and character to groups of buildings, to a whole neighborhood, and city.
- ❖ It is undoubtedly that a combination of spatial planning and design could help address spatial challenges if the needed education is given to students and professionals in the sector.
- ❖ Hence, spatial planning system of a country must be one of the well-established systems through which the government carries out the implementation of plans, ideas and policies.

INTRODUCTION Cont'd

- ❖ Over the years, the spatial planning system for Ghana has been weak, ineffective and inefficient in the delivery of their mandate due to some challenges (Yeboah 2002; Owusu 2008).
- ❖ Notable among them is the lack of adequate personnel with the requisite expertise to hand and manage spatial data for town/urban planning.
- ❖ Any programme developed to address the shortfall in the spatial planning sector is necessary and relevant.
- ❖ Programmes at the university level is supposed to provide the combination of course relevant to town/urban planning.

INTRODUCTION Cont'd

- ❖ Unfortunately, spatial planning and related programme at some universities in developing countries such as Ghana does not adequately address the issue of incorporating more surveying and mapping sciences into the programmes.
- ❖ Ghana currently has Land Use and Spatial Planning Act, 2016 (Act, 925). To achieve this in the act, a holistic approach is needed in the training of planners.
- ❖ The pivot of the planners' knowledge base should be introductory courses in surveying and mapping sciences, which include: surveying, cadastral surveying, 3D and multi-purpose cadastre, Global Navigation Satellite System (GNSS), Geographic Information System (GIS) and Remote Sensing (RS).

INTRODUCTION Cont'd

- ❖ A well-developed spatial planning and design with surveying and mapping sciences will help the spatial planner and designers in: resource inventory, analysis of existing situations, modelling and projection.
- ❖ In view of that, the Spatial Planning and Design programme that is being considered at University of Mines and Technology (UMaT) addresses such pitfalls to help in the full implementation of the functions of Land Use and Spatial Planning Authority at the regional, and district levels of Ghana.
- ❖ UMaT currently runs a BSc/MSc/PhD programmes in Geomatic Engineering and thus has the requisite staffs to handle these courses.

BRIEF INFORMATION ABOUT GHANA

- ❖ The current estimated population of Ghana based on the latest United Nations estimates is about 29 277 587 people with a total land area of 227 540 km².
- ❖ The population density for Ghana is 129 per km. The urban population stands at 54.4% (Anon., 2018).
- ❖ The criteria for the creation of new districts, municipal and metropolitan assemblies in Ghana include: population; economic viability of natural resources; potential for sustainable revenue generation; geographical contiguity; and ethnic homogeneity among others.

IMPORTANCE OF SPATIAL PLANNING

- ❖ Development of tourism through the promotion and protection of the landscape and conservation of cultural environments that encourages local employment.
- ❖ Prevention of the natural environment from being further destroyed.
- ❖ providing a mid-term to long-term framework for development and coordinating policies across sectors of the economy.
- ❖ contributes to achieving balance in urban development between using undeveloped land versus reusing old urban sites and promoting compact urban development.
- ❖ Sustainable spatial planning requires preventing uncontrolled urban sprawl in the open landscape.

IMPORTANCE OF SPATIAL PLANNING Cont'd

- ❖ Potential environmental risk such as flooding could be addressed.
- ❖ In most instances where community participation is part of the spatial planning process, the needs of the local communities in policy development are also considered.

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CHALLENGES OF SPATIAL PLANNING IN GHANA

- ❖ One of the main challenges of spatial planning is how to tackle growing urbanization, especially in a more sustainable way (Herlin, 2004).
- ❖ Currently, Ghana is undergoing an increased rate of urban growth, with most of its population living in urban cities and with a high demand on urban land.
- ❖ There is a weak state control in spatial planning and an over concentration on 'formal' plans or schemes (Roy, 2005; Watson, 2009).
- ❖ Spatial planning in Ghana has mostly been the preparation of formal plans/schemes without taking into consideration the social dimensions of productive engagement and involvement of the residents of the locality.

CHALLENGES OF SPATIAL PLANNING IN GHANA

Cont'd

- ❖ The spatial planning system of Ghana creates a series of formal plans, offering the locality no opportunity to consider the complexity of the plan and to integrate uncertainty in such a way as to make it possible to develop and implement formal plans while making provision for self-organization as an integral part of the planning process (De Roo, 2010).
- ❖ Even as these formal plans have been prepared, there is no strict compliance of people adhering to these them since their supervisory department is ineffective in the discharge of their duties.
- ❖ Again, the governmental departments in charge of spatial planning does not take into consideration the terrain or landscape of the area in the course of preparing and planning for the area.

CHALLENGES OF SPATIAL PLANNING IN GHANA Cont'd

- ❖ Moreover, haphazard development and unplanned urbanisation affects spatial planning in Ghana (Cobbinah *et al.*, 2015; Nwaka, 2005).

INADEQUACIES IN SKILL DEVELOPMENT

❖ Several public and private organizations/companies in Ghana make use of Spatial Planners and indeed some Universities in Ghana run various Spatial Planning related programmes.

a. Kwame Nkrumah University of Mines and Technology – Department of Planning

i. BSc. Development Planning

ii. BSc. Human Settlement Planning

b. University of Cape Coast – Department of Geography and Regional Planning

i. BSc. Geography and Regional Planning

c. University of Developmental Studies – Faculty of Planning and Land Management

i. BSc. Planning

RELEVANCE OF INTEGRATING SURVEYING AND MAPPING SCIENCES

- ❖ Several public and private organizations/companies in Ghana make use of Spatial Planners and indeed some Universities in Ghana run various Spatial Planning related programmes.
- ❖ However, for Spatial Planners and Designers to be at the forefront of handling land use, spatial planning and design issues effectively and efficiently, more spatial planners and designers are needed at the various districts, municipal and metropolitan areas with a strong surveying and mapping sciences foundation.
- ❖ Although these institutions have some surveying and mapping courses, there is the need to add more and revise their contents to meet the changing demand of the land use, spatial planning and design profession in Ghana.

RELEVANCE OF INTEGRATING SURVEYING AND MAPPING SCIENCES Cont'd

- ❖ More short and refresher courses should be organised for practicing planners to broaden their knowledge and scope in the new development in spatial planning.
- ❖ The skill gap currently is the inadequate planners with expertise in handling and management of Spatial and non-Spatial Information in both the public and private sectors of Ghana.
- ❖ This invariably will hinder the full implementation of the Land Use and Spatial Planning Authority mandates.
- ❖ This Spatial Planning and Design programme will develop scientific and professional capacities which will address the current educational planning issues hindering development.

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RELEVANCE OF INTEGRATING SURVEYING AND MAPPING SCIENCES Cont'd

- ❖ Therefore, the establishment of this programme is a major prerequisite for successful implementation of the National Spatial Development Framework and the Land Use and Spatial Planning Act 2016, (Act 925).
- ❖ This new programme has the various courses that cover the scientific and professional aspects of a Spatial Planning and Design.

PLANNED GROWTH, DIRECTION AND IMPACT OF THE PROGRAMME

- ❖ The planned growth of the programme is to ensure that innovations in surveying and mapping sciences as well as Spatial Planning and Design are periodically incorporated in the programme at UMaT.
- ❖ Emphasis will be placed on practical training.
- ❖ The programme when fully implemented will become the corner stone for the training of the much-needed spatial planners and designers for Ghana, the west Africa sub region and Africa as a whole.

PLANNED GROWTH, DIRECTION AND IMPACT OF THE PROGRAMME Cont'd

- ❖ The impacts of the graduate of the programme will be as follows: specialised skilled spatial planners and designers in both the private and public sectors changing the phase of spatial planning in the country; graduates with excellent skills in:
 - ✓ mine infrastructure planning and design;
 - ✓ commercial/industrial environmental planning and management and
 - ✓ natural resources management;
- ❖ Competent graduates who will be solving spatial planning related matters diligently, critically and logically based on the Land use and Spatial Planning Authorities guides/documents and other related guidelines in the west Africa sub-region and Africa as a whole;

PLANNED GROWTH, DIRECTION AND IMPACT OF THE PROGRAMME Cont'd

- ❖ Competent strategic spatial planners and designers capable of using artificial intelligence in solving complex problems in the spatial planning and design sector;
- ❖ Graduates who possess leadership and professional qualities as well as able to contribute to the planning, management and development of land locally and globally.
- ❖ The impact of the products of the programme from UMaT will positively contribute to the socio-economic development of Ghana and the rest of Africa.

CONCLUSIONS

- ❖ In the education of spatial planners and designers, it is imperative to carefully and holistically identify various relevant courses that will train students who will meet the needs of the spatial planning sector of the country.
- ❖ Surveying and mapping sciences has been identified as the bedrock of spatial planning and design and hence the need to focus more in this area.
- ❖ In view of that, the Spatial Planning and Design programme being proposed at UMaT has adopted various strategies to develop a more holistic programme that incorporates surveying and mapping science courses.

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CONCLUSIONS Cont'd

- ❖ The researchers in this study recommends more support from sector agencies locally and globally to help achieve the aims and objectives of the programme at UMaT.

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