FAQs on NLUZ

1. What is National Land Use Zoning (NLUZ) and why is it important?

- Answer: NLUZ is a critical planning tool used to manage and regulate land development and use within a country. It is essential for managing urban growth, protecting the environment, ensuring public safety, and maintaining the overall well-being of citizens.

2. Does Bhutan currently have a National Land Use Zoning system in place?

- Answer: No, Bhutan does not have a National Land Use Zoning system in place at the moment.

3. What are the key concerns and challenges related to land use in Bhutan?

- Answer: Some of the key concerns include the scarcity of arable land, haphazard development, and conflicts between various land uses.

4. What legal provisions and policies support the implementation of NLUZ in Bhutan?

- Answer: Legal provisions such as Article 5 (b) of the Constitution 2008, the Economic Development Policy (EDP) 2016, and Section 303 of the Land Act 2007, as well as policies like the Bhutan National Human Settlement Strategy 2017, support the NLUZ initiative. (need to add more list here)

5. How does NLUZ aim to benefit Bhutan in terms of spatial planning and land use management?

- Answer: NLUZ aims to establish a harmonized national land use system, create a sound online database and maps for zoning, and make optimum, rational, and sustainable use of limited arable land.

6. What are the guiding principles of the NLUZ initiative in Bhutan?

- Answer: The NLUZ initiative is guided by principles such as optimizing land use based on capability, minimizing land degradation, ensuring sustainable agriculture, and promoting socio-economic development while ensuring environmental well-being.

7. What are the main objectives of the National Land Use Zoning initiative in Bhutan?

- Answer: The objectives include establishing a harmonized national land use system, revalidating designated areas and land uses, creating a sound online database and maps for zoning, and facilitating the establishment of land use ordinances.

8. How does the NLUZ initiative contribute to Bhutan's long-term goals and well-being?

- Answer: NLUZ is expected to create credible spatial information, support cross-sectoral access and decision-making processes, and enhance resilience to climate change, among other benefits.

9. How is the NLUZ initiative structured, and what are the expected benefits of its successive editions?

- Answer: The NLUZ initiative consists of three successive editions, each with its own set of benefits. These include creating a spatial data repository platform, facilitating land and resource management, and supporting strategic decision-making.

10. What is the scope of the first edition of NLUZ in Bhutan?

- Answer: The first edition of NLUZ involves reclassifying land types into macro land uses, creating a spatial inventory, and addressing cross-sectoral technical anomalies and potential conflicts in land uses.

These FAQs provide a concise overview of the key information and objectives related to the National Land Use Zoning initiative in Bhutan.

Execution Modality:

1. **What is NLUZ, and why has it become a priority for the country?**

   Answer: NLUZ stands for National Land Use Zonation. It has become a priority for the country due to the increasing reliance on geospatial analysis and location intelligence in the development planning and decision-making process in a volatile global scenario.

2. **How was the NLUZ initiative initiated and approved?**

   Answer: The NLUZ initiative was initiated through a High-Level Consultation (HLC) meeting, followed by stakeholder consultations. It was approved as a priority project by the 14th Gross National Happiness Commission (GNHC) meeting.

3. **Why does NLUZ require multi-stakeholder engagement and ownership?**

   Answer: NLUZ involves land, which cuts across all sectors, making multi-stakeholder engagement and ownership necessary for better coordination, efficiency, effectiveness, and accountability.

4. **What challenges did the NLUZ initiative face due to the COVID-19 pandemic?**

   Answer: Due to the COVID-19 pandemic, many specific activities related to NLUZ could not be undertaken on time, leading to a scope reduction to focus on alienable land zonation.

5. **What agencies and organizations have supported the NLUZ exercise?**

   Answer: The Royal Government of Bhutan (RGoB) and allied agencies, including ministries, WWF with IKI funding, and REDD+ support, have provided support and engagement for the NLUZ exercise.

Methodology:

6. **What are the five key steps in the methodology for the first edition of NLUZ mapping?**

   Answer: The five key steps in the methodology for the first edition of NLUZ mapping are: Data Acquisition and Validation, Spatial Dataset Inventorization, Defining Feature Datasets and Zones, Technical Definitions for Land Uses, and Geo-processing, Map Analysis, and Zone Output.

7. **Why is metadata important in the context of NLUZ?**

   Answer: Metadata is essential in the context of NLUZ because it provides information about the characteristics, sources, quality, and context of geospatial datasets, ensuring accurate analysis and decision-making.

8. **Which metadata classes and elements were used for the first edition of NLUZ initiatives?**

   Answer: For the first edition of NLUZ initiatives, seven specific metadata schema classes were utilized, including data identification, contact information, data quality, date information, mode of acquisition, spatial reference system, and distribution.

9. **How were feature datasets and zones defined for NLUZ mapping?**

   Answer: Feature datasets and zones were defined using technical definitions based on relevant legal documents, credible national and international sources, and, in the absence of definitions, through consensus and adoption by the TWG.

10. **Can you provide examples of the types of spatial datasets acquired for NLUZ purposes?**

   Answer: Spatial datasets acquired for NLUZ include data related to land use, administrative boundaries, airports, glacial lakes, mines, hydropower plants, roads, cultural sites, demographics, and more, obtained from various agencies and sources.

1. What are the major thematic layers in the land use zoning process?

- The major thematic layers in the land use zoning process include nine macro zones, twenty-six micro zones, and nineteen nano zones. These layers encompass various aspects such as land use types, demography, and Right of Ways (RoW).

2. What is the definition of Macro Zone 1: Agricultural Land?

- Macro Zone 1, Agricultural Land, refers to land used for crop production and livestock rearing to produce food, fiber, and fuel for human sustenance. It consists of four micro land use zones, each with specific purposes.

3. What is the difference between Protected Chhuzhing and Regulated Chhuzhing in Macro Zone 1: Agricultural Land?

- Protected Chhuzhing is irrigated and bench-terraced agricultural land designated solely for paddy cultivation to ensure rice self-sufficiency. Regulated Chhuzhing, on the other hand, includes agricultural land outside of Protected Chhuzhing and can be used for paddy production and other agricultural purposes.

4. What is the definition of Macro Zone 2: Rural Settlement?

- Macro Zone 2, Rural Settlement, refers to settlements other than defined urban areas. These settlements may include residential and institutional land used for dwellings and rural habitations. It often involves populations dependent on agriculture and pastoral practices.

5. What does the term "Institutional Land" in Micro Zone 2.2 refer to?

- Institutional Land in Micro Zone 2.2 refers to registered land used for purposes such as office complexes, research stations, academic institutions, medical facilities, and religious establishments. Within Thromde boundaries, it falls under the urban zone.

6. What is the objective of Macro Zone 3: Sustainable Forest Management Area (SFMA)?

- Macro Zone 3, Sustainable Forest Management Area (SFMA), is designated for forest management practices that balance the utilization of forest resources with conservation and protection. The goal is to ensure the long-term health and productivity of the forest ecosystem while meeting various needs.

7. How is Micro Zone 3.2 defined in relation to forests?

- Micro Zone 3.2, Community Forests (CF), refers to areas of state reserved forest land designated for management by local communities. This allows communities to participate in the management of these forested areas.

8. What is the primary purpose of Macro Zone 4: Nature Conservation Area (NCA)?

- Macro Zone 4, Nature Conservation Area (NCA), is established primarily for the conservation and protection of natural ecosystems, biodiversity, and ecological processes. It includes areas like National Parks, Wildlife Reserves, and Biological Corridors.

9. How is Nano Zone 4.1.1, "National Park," defined?

- Nano Zone 4.1.1, National Park, refers to large natural or near-natural areas set aside to protect ecological processes, species, and

ecosystems. They also provide opportunities for activities like recreation, education, and research.

FAQs about Land Use Land Cover (LULC):

1. What is LULC mapping, and why is it important for the National Land Use Zoning (NLUZ) project in Bhutan?

- LULC mapping refers to the process of categorizing and mapping different land cover types in a specific area. In Bhutan's NLUZ project, it is crucial because it helps understand the current land cover on the ground, which is vital for land use planning.

2. How often is LULC mapping conducted in Bhutan, and what are the major land cover classes used in this mapping?

- LULC mapping is done periodically. The most recent mapping in 2020 is considered. It involves 13 major land cover classes, and these classes are used to assess land cover changes over time.

3. Can you explain the technical definitions of some of the land cover classes used in Bhutan's NLUZ, such as "Forests" and "Agriculture Land"?

- "Forests" are defined as land with trees spanning more than 0.5 hectares, with trees higher than 5 meters and a canopy cover of more than 10%. "Agriculture Land" includes only cultivated land at the time of land cover assessment, and it includes various sub-classes.

FAQs about Demography Component:

1. What components of demography are used in the NLUZ project, and why are they important for land use planning?

- The NLUZ project utilizes components such as population composition, household data, population density, and mean household size. These components are essential for understanding population distribution and its impact on land use.

FAQs about Right of Way/Buffer:

1. What is the significance of the "Heritage" buffer zone in Bhutan, and how is it defined?

- The Heritage buffer zone is crucial for the protection of designated heritage buildings or important cultural sites. It is defined as the area surrounding the conservation zone of these sites.

2. How are road right of way (RoW) widths determined for different types of roads in Bhutan, and why are they important?

- The RoW widths vary depending on the type of road, and they are important for road construction and maintenance. They are specified to ensure safe and efficient road operations.

3. What is the purpose of RoW for powerlines, and how is its width determined based on voltage levels?

- RoW for powerlines is essential for the safe transmission of electricity. The width of RoW varies based on voltage levels, ensuring the proper operation and maintenance of transmission facilities.

FAQs about Fundamental Geo-Spatial Layers:

1. What is the Bhutan Glacial Lake Inventory, and why is it significant for the NLUZ project?

- The Bhutan Glacial Lake Inventory identifies and assesses glacial lakes in Bhutan. It is crucial for monitoring and managing the risks associated with Glacial Lake Outburst Floods (GLOFs).

2. What is the purpose of the Cadastral and Thram Database in Bhutan's NLUZ project?

- The Cadastral and Thram Database contains land ownership, boundary, and spatial data. It is used to understand land ownership and boundaries, which are vital for land use planning.

FAQs about Geo-processing and Map Analysis:

1. How is data collected and managed for map analysis in the NLUZ project, and why is it important?

- Data is collected from various stakeholders and organized in a central database. Efficient data management ensures accurate and accessible data for map analysis, which is crucial for decision-making.

2. What GIS software is used for map analysis, and how does it contribute to the accuracy of the analysis?

- GIS software such as QGIS, ArcGIS Desktop, and ArcGIS Pro is used for precise calculations and overlapping area assessments, ensuring the accuracy and integrity of the analysis.

FAQs about Map Design:

1. How are maps designed for the NLUZ project, and what considerations are taken into account during the design process?

- Maps are designed by considering project objectives, user needs, data analysis, cartographic principles, and iterative discussions. The goal is to create clear, accurate, and user-friendly maps.

2. What is the role of color, symbols, and layout in map design, and how are these elements selected?

- Color, symbols, and layout are essential for map clarity. They are chosen carefully to ensure differentiation, readability, and overall effectiveness in communicating information.

FAQs about Zoned Outputs:

1. What are the two categories of final map outputs in the NLUZ project, and how do they differ?

- The two categories are Scale-Based Maps and Area-Based Maps. Scale-Based Maps vary in detail based on scale and paper size, while Area-Based Maps focus on specific administrative regions like Dzongkhags and Gewogs.

2. What is the significance of Dzongkhag and Gewog maps in the NLUZ project, and how do they cater to users' needs?

- Dzongkhag maps provide detailed information about district-level administrative regions, while Gewog maps zoom in further, offering grassroots-level data. They are essential for analysis, planning, and reference at different administrative levels.

1. What is NLUZ, and what is its primary purpose?

- Answer: NLUZ stands for National Land Use Zoning, and its primary purpose is to determine and manage land use across various categories and zones in Bhutan.

2. How many land types are there according to the registry, and what is their relevance to land use on the ground?

- Answer: There are over 23 land types as per the registry, but their relevance to land use on the ground is often unclear, leading to potential misinterpretations of land functionality.

3. What are the nine macro land uses identified in Bhutan, and which one covers the largest area?

- Answer: The nine macro land uses are Agricultural Land, Culture and Heritage, Industrial, Nature Conservation Area (NCA), Rangeland, Rural Settlement, Sustainable Forest Management Area (SMFA), Urban, and Strategic Development Zones (SDZ). NCA covers the largest area.

4. How was the determination of land use conflicts carried out, and what geospatial layers were considered for this purpose?

- Answer: The determination of land use conflicts involved considering various geospatial layers, including river and water bodies, cadastral and thram database, administrative boundary, contour, and more. The process aimed to identify conflicts among different land use categories.

5. What is the per capita land use in Bhutan, and how does it compare to international standards?

- Answer: Bhutan has one of the lowest per capita land holdings in terms of land use. It falls significantly below international standards, which poses challenges for land management and optimization.

6. What are the main causes of land use conflicts in Bhutan, according to the provided information?

- Answer: The causes of land use conflicts in Bhutan can be summarized into three main triggers: increasing scarcity, poor governance and institutional structure, and cross-land use dynamics and influences.

7. Can you provide examples of land use conflicts identified in Bhutan?

- Answer: Yes, some examples of land use conflicts in Bhutan include conflicts between Nature Conservation Areas (NCA) and Agricultural Land, Urban boundaries intersecting biological corridors, and schools being relocated due to industrial activities.

8. How are land use conflicts ranked and assessed, and what actions are proposed to mitigate them?

- Answer: Land use conflicts are ranked based on their impact and assessed for existing controls and mechanisms. Proposed mitigation measures vary but often involve defined integration, ordinances, and cross-sectoral negotiations.

9. What is the significance of the "Limited Land, Unlimited Space" concept mentioned in the passages?

- Answer: "Limited Land, Unlimited Space" is a concept that acknowledges Bhutan's geographical limitations and the need for land optimization schemes and management due to its limited arable land.

10. What percentage of Bhutan's total country area is categorized as white-spaces, and what is their potential use? - Answer: White-spaces constitute about 35.43% of Bhutan's total country area, and they are considered as potential areas for future use and expropriations, although specific uses are not defined in the provided information.

1. **What is the purpose of the National Land Use Zoning (NLUZ) initiative in Bhutan?**
   The NLUZ initiative aims to create zoning maps, manage land use, and address land-related issues and challenges in Bhutan.
2. **What are some of the major issues and challenges identified in the NLUZ initiative?**
   - o Cadastral Data: Issues related to Thram database integration, land types, residential plots without building footprints, and inaccurate settlement land uses.
   - o Urban Boundary: Problems related to the definition and implementation of urban boundaries.
   - o Protected Agriculture Land (PAL): Challenges in validating PAL data and determining spatial PAL requirements.
   - o Community Land Data: Issues regarding the actual land uses of registered community lands.
   - o Nonconforming Land Uses: Cases of land uses not conforming to the designated plans.
   - o Religious Sites: Challenges related to religious institution plots and their land uses.
   - o Irrational Acquisition of Land: Cases of institutions occupying land not used for their designated purposes.
   - o Existing Mines: Issues with mining lease plots and their locations.
   - o Absence of Critical Dataset: Lack of critical watershed and soil data for land use planning.
3. **What are the limitations and error tolerance considerations in the NLUZ initiative?**
   - o Reclassification and Validation: Challenges related to outdated satellite imagery and the need for ground truthing.
   - o Data Transformation and Harmonization: Potential information loss during data alignment processes.
   - o Varied Data Acquisition Methods: Variations in data accuracy due to different acquisition methods.
   - o Map Scaling and Base Data Usage: Considerations for map scale and base data accuracy.
   - o Area Calculation: Explanation of the unit used for area calculations.
4. **What are the instant benefits derived from the NLUZ initiative?**
   - o Improved data creation and validation for various sectors.
   - o Rationalization of land uses based on changing requirements.
   - o Reduction in land use conflicts.
   - o Resolution of issues related to community forests, urban boundaries, administrative boundaries, and more.
   - o Creation of a strategic data sharing platform.
   - o Delineation of white-space areas for land use planning.
5. **What is the future course of action for the NLUZ initiative?**

- o Plans for the Second and Third Editions of NLUZ.
- o Data acquisition, validation, parameterization, and geo-processing in future editions.
- o Plans for access and sharing of NLUZ maps.
- o Initiatives for resolving land use conflicts.
- o Continuation of addressing identified issues and challenges.
- o The role of Land Use Accounting (LUA) for land use change monitoring.

6. **How does the NLUZ initiative contribute to spatial envisioning and spatial policy in Bhutan?**

The NLUZ initiative forms the basis for spatial envisioning and the adoption of national spatial policy in Bhutan. It aims to tackle spatial divisions, unlock development potential, guide infrastructure investment, manage economic and demographic shifts, and facilitate spatial coordination between agencies.

7. **What are the normative principles considered in spatial envisioning and adopting the spatial policy in Bhutan?**

Normative principles include sustainability, resilience, conservation, quality, efficiency, and righteousness in land use planning and governance.

8. **What is the overall vision for the land sector in Bhutan as outlined in the Sazhi 2034+ document?**

The vision is to achieve a 'Geo-Enabled Nation with Par Excellence Land Governance' aligned with the development vision of 'Developed Bhutan by 2034.'