



Nepal Health Sector Support Programme III (NHSSP – III)

**Joint Hospital Assessment Report – Karnali Province
Dullu Hospital
Final Draft
26 August 2019**



Disclaimer: -

This material has been funded by UKaid from the UK government; however the views expressed do not necessarily reflect the UK government's official policies”

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2 Introduction

2.1 Background

The Nepal Health Sector Support Programme 3 (NHSSP) is a four-year programme designed to support the Government of Nepal (GoN) in implementing the Nepal Health Sector Strategy (2015-2020). The NHSSP is funded by UK Aid / UK Department for International Development (DFID) and aims to enhance the capacity of the Ministry of Health and Population (MoHP) and Department of Urban Development and Building Construction (DUDBC) to build a resilient health system providing quality health services for all.

The health systems component of NHSSP provides support to the MoHP to improve health policy-making and planning, procurement and financial management, health services, and the use of evidence for planning and management. The NHSSP's infrastructure component focuses on strengthening the capacity of government to develop resilient health infrastructure able to withstand natural disasters and climate change-induced hazard. The NHSSP Health Infrastructure team comprises architects, engineers, and Geographical Information System (GIS) experts, operating in the following work areas:

- development/improvement of national and provincial health infrastructure policy
- promoting the use of a planned integrated approach to health infrastructure development
- development of appropriate standards and codes, including the national standards for health infrastructure, and codes for seismic retrofitting of health infrastructure
- building the capacity of MoHP in evidence-based health infrastructure policy-making and managing an integrated, resilient health service
- building the capacity of the DUDBC to develop, manage and maintain health infrastructure works more effectively and efficiently, and to build technical skills in specialist aspects of health infrastructure development including utility services, healthcare waste management, seismic retrofitting and procurement procedures
- providing technical support for the seismic and functional retrofitting of two major hospitals at Bhaktapur and Pokhara

In the context of the Nepal federal administrative structure, the NHSSP Health Infrastructure team is providing technical assistance to sub-national governments. It is assisting municipalities to develop short-, medium- and long-term interventions to improve health facilities.

Currently, the NHSSP health infrastructure team working with five Provincial Ministries of Social Development, primarily providing technical, design and planning support for improving health facilities. In Karnali Province, the team is working jointly with USAID's Strengthening Systems for Better Health and Saving Newborn Lives (SSBHSNL). The SSBHSNL programme is supporting the assessment of human resources and service delivery in selected hospitals across the province, the NHSSP team is carrying out assessments on health infrastructure, connectivity and utilities.

2.2 Assessment Methodology and Process

The NHSSP team is guided by the following key principles in making assessments and recommendations for development of health infrastructure:

- Promoting integrated and efficient use of health infrastructure to provide better services to users
- Maximizing the use of existing facilities, and extending their operational life span where feasible and economic
- Improving operational efficiency and connectivity within the health facilities network, and promoting referrals to relevant facilities

- Promoting the use of and compliance with the Nepal Health Infrastructure Development standards 2017 (NHIDS) and the Standard Guidelines for the Development of Health Infrastructure 2017

A technical team from the Nepal Health Sector Support Programme 3 (NHSSP) carried out a field assessment at Dullu Hospital on 20 June 2019, at the request of the Provincial Ministry of Social Development (MoSD).

The general methodology can be summarised as:

- 2.2.1 Collection of data and information:** Collection of secondary data on the hospital from sources including DoHS, MoSD information, Department of Urban Development & Building Construction (DUDBC) records – Divisional Offices and Provincial Project Implementation Units, hospital records, reports from previous project consultants.
- 2.2.2 Field assessment tools:** The NHSSP team used its standard checklist and needs assessment tool to gather information on buildings on the site.
- 2.2.3 Field assessment exercise:** The NHSSP technical experts carried out a field assessment on 20 June 2019, facilitated by the hospital management.
- 2.2.4 Consultation meetings:** The NHSSP team have engaged closely with the Provincial Minister, representatives of the MoSD, hospital management, staff, the local authority and other relevant stakeholders to secure information on proposed developments, operational requirements, catchment areas, road networks, and future plans.
- 2.2.5 Analysis of data and information:** The NHSSP team analysed the primary and secondary data against a range of factors, including Health Infrastructure Information System (HIIS) data, Geographical Information System (GIS) maps, existing drawings, health facility standards and categories drawn from Nepal Health Infrastructure Development Standards (NHIDS). This analysis identified infrastructure and service delivery gaps, problems and key issues.

4 Infrastructure (NHSSP)

4.1 Site, buildings and existing situation

Dullu Hospital is located in Dullu, Dullu municipality, Dailekh District. It is located on a ridge nearby to Dullu town, and served by dirt access roads from the nearby main roads, including the Karnali Highway (see Figure 1). The hospital is operating from the building constructed in 2063 BS (2006) which originally was designed as a 5 bed Primary Health Care Centre. Later the status of the PHCC was upgraded to hospital in 2071 BS (2014). Currently it is running 10 beds (5 in-patient and 5 emergency). The site measures 9 ropani (3,505 sq m). The Hospital has been categorized as a Primary B2 Level hospital under the Nepal Health Infrastructure Development Standards (NHIDS).

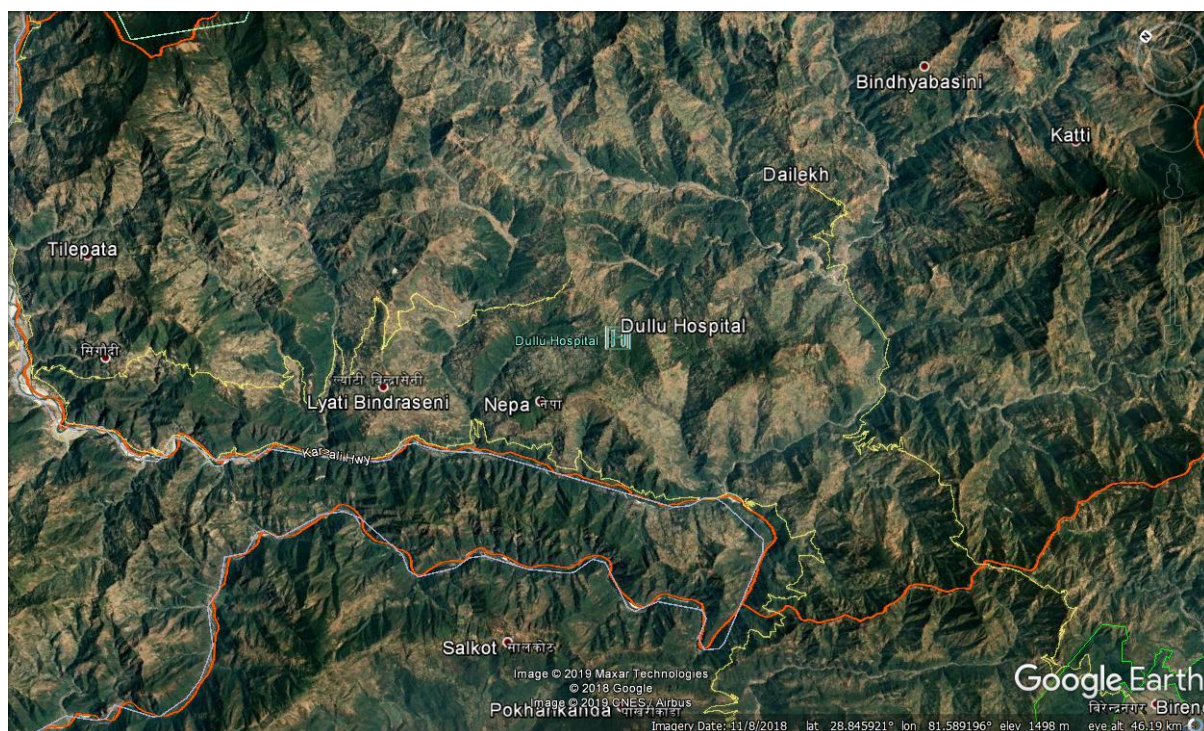


Figure 1: Dullu Hospital location

According to the Health Infrastructure Information System (HIIS), the immediate hospital catchment within 7 kms radius (between 2-3 hours walk) is 40,867 people. The dependent population – the total number of people in the District who could be referred to Dullu Hospital – is over 53,000 (see Table 1 and Figure 2).

Hospital	Dependent Population	Catchment Population (within 7kms radius)	Categorized Status
Dullu Hospital	53,680	40,867	Primary Hospital Type B2

Table 1: Dullu Hospital Dependent Population

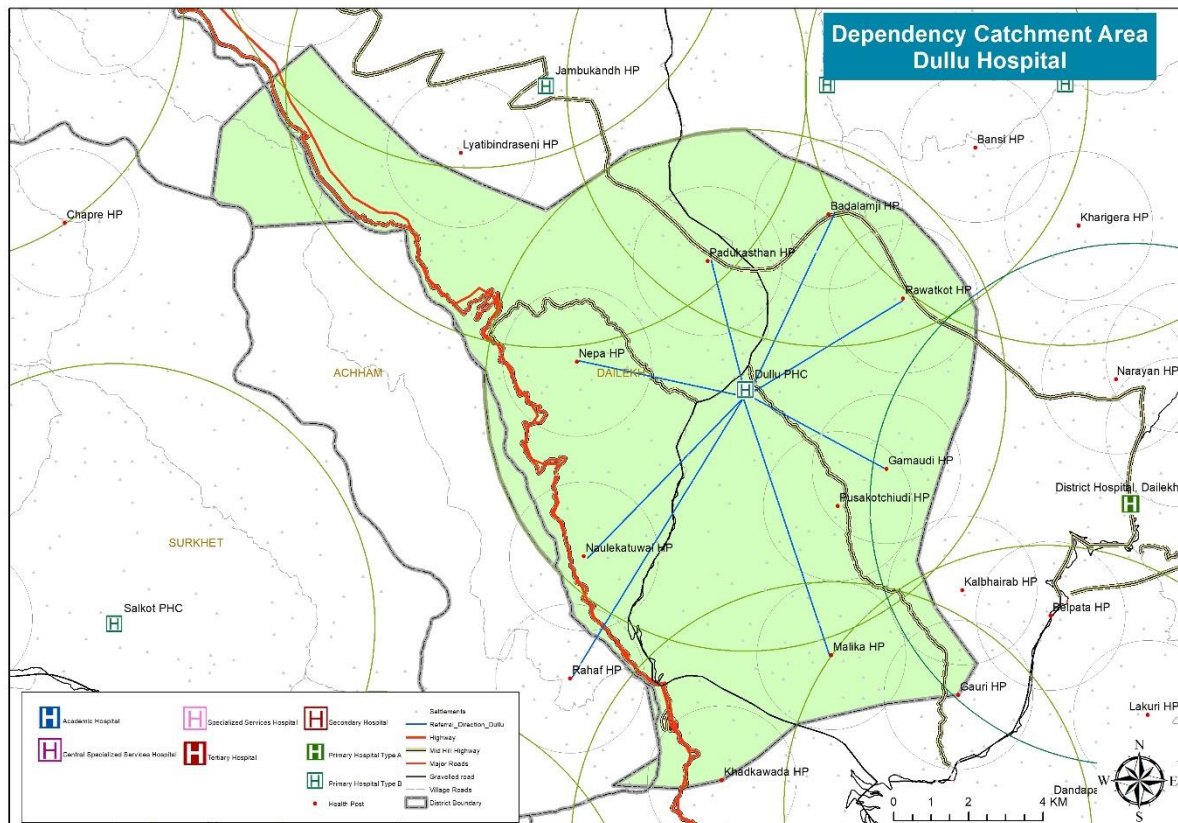


Figure 2: Dullu Hospital Dependency Catchment Area

The NHSSP Health Infrastructure team carried out a field inspection at Dullu Hospital in June 2019, at the request of the Provincial Ministry of Social Development (MoSD).

The Hospital comprises the following structures (see Figures 3 to 7):

- Out-patient Department and In-patient Block
- Emergency Block
- Maternity Block
- X-Ray Block (not surveyed – locked at time of field visit)
- Public Toilet Block
- Central Sterile Supplies Department
- Storage Block
- Office Room
- Hospital Kitchen
- Doctor's Quarters (2 x family quarters)
- Nurse Quarters (2 x family quarter)
- Nurse Quarters (4 x 1 rooms)
- Mortuary Block – the mortuary block is isolated from the Hospital Precinct, and is approximately 10 minutes' walk away



Figure 3: Dullu Hospital entrance



Figure 4: Dullu Hospital Maternity, Out-Patient and In-Patient Blocks



Figure 5: Dullu Hospital X-ray Block and Emergency Department



Figure 6: Dullu Hospital External Sheltered Waiting Area and drying area for washing



Figure 7: Dullu Hospital Mortuary Block

4.2 Assessment Findings

4.2.1 Current services

The hospital is designed to provide 5 beds, but is currently running 5 emergency and 5 in-patient beds. At times of high pressure the hospital has had to provide up to 30 beds.

Currently, the following services are provided at the hospital:

- In-patients - 5 beds design capacity, but has increased significantly at times of high demand
- Maternity (see Figure 8):
 - Normal delivery: approximately 20-21 normal deliveries per month
 - Delivery services: There is no provision for cesarean section (CS) operations



Figure 8: Dullu Hospital Maternity – Active Labour and Delivery Rooms

4.2.2 Utilities

The NHSSP team assessed the level and condition of utility services as follows:

Water supply

There are three natural water sources – one serves the hospital while the others serve the residential quarters. The hospital supply is insufficient – the source is intermittent in summer, and reliable only for 10 months of the year.

There is no hot water supply system.

Electricity

There is a connection to the national grid, and three phase electricity has recently been installed. This should improve the performance of electrical equipment. The hospital has also recently installed a 5KV generator. The solar power back-up system (panels and batteries) is currently inoperable (see Figure 9). There is no Uninterruptible Power Supply (UPS).

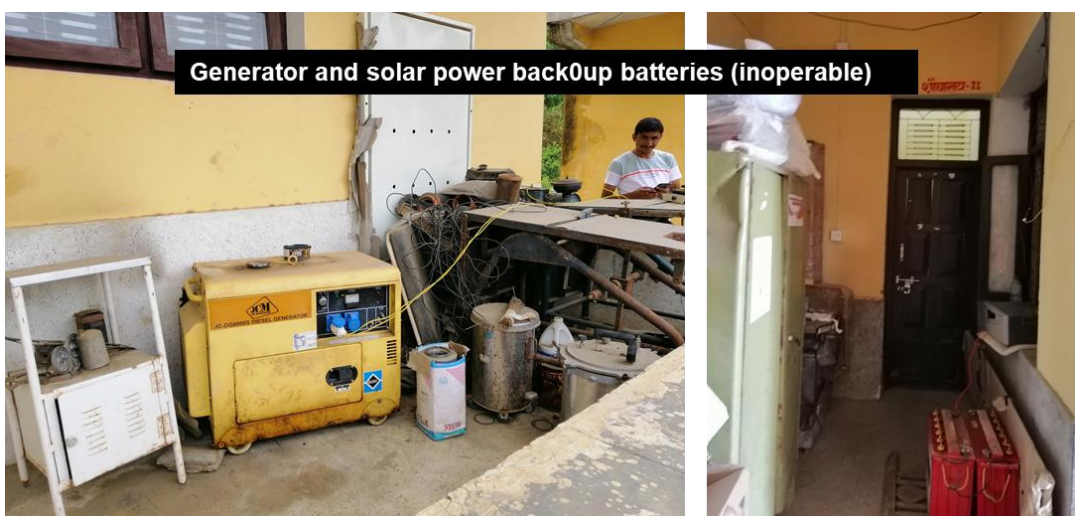


Figure 9: Generator and Solar Power Back-up Batteries

4.2.3 Waste management

The hospital uses the pit disposal method, and the majority of waste is burned out in the open.

4.2.4 Landscaping

There is a small formal garden and grassed areas to the front of the main block.

4.2.5 Accessibility and mobility

There are various examples where the hospital is below Nepal Health Infrastructure Development Standards (NHIDS). The In-patients Department is on the Main Block First Floor, accessible by stairs. Toilets are generally built with steps, and there is no disability friendly toilet (see Figure 10)



Figure 10: Access to In-patients Department and Step toilet limiting access for people with disabilities

4.2.6 Building Defects

Generally speaking the buildings are structurally sound, although almost all have minor cracks and defects. However, the Main Block requires closer attention, with the following problems identified (see Figures 11 and 12):

- Water penetration through expansion joints
- Settlement and / or seismic cracks to window corners and Reinforced Cement Concrete (RCC) columns
- Various broken doors and windows
- Cracks at lintel band also
- Cracks at masonry columns
- Weak mortar

- Apron settlement



Figure 11: Settlement and /or seismic cracks



Figure 12: Water penetration through expansion joint

4.2.7 Central Sterile Supplies Department (CSSD)

The Central Sterile Supplies Department is (somewhat unusually) located on top of the Public Toilet Block, accessed by a small RCC slab footbridge with steel handrails (see Figure 13).



Figure 13: CSSD building and public toilet.

While this arrangement may be convenient for accessing supplies from the In-patient Department, it is not ideal.

4.2.8 Equipment

The hospital is supplied with the following equipment:

- X-ray machine: 1
- Ultrasonography (USG): 2 – one operational, the other out of service
- Electrocardiogram:

Like most small facilities, Dullu Hospital has to send its equipment away for repair and maintenance. One USG machine has been awaiting repair at Nepalgunj Hospital for two years.

4.2.9 Human resources

The hospital has a staff establishment including the following positions:

- Medical Superintendent x 1
- Medical Officers x 4
- Radiographer x 1
- Anesthesia Assistant x 1
- Laboratory Technician x 1
- Laboratory Assistant x 1
- Pharmacy Assistant x 1
- Nursing Officer x 1
- Staff Nurse x 1
- Senior Auxiliary Nurse Midwife and Auxiliary Nurse Midwife x 5
- Auxiliary Health Worker x 3
- Kharidar x 1
- Office Assistant x 1

4.2.10 Development plan

There is no development plan for the hospital.

4.3 Gap Analysis

Upgrading Dullu Hospital to Primary B2 level requires the provision of additional services and space to house them. The lack of an operating theatre (OT) is an immediate challenge, as neither major nor minor procedures take place at the hospital. Cases requiring such interventions are referred to Nepalgunj or Surkhet.

The NHSSP team identified the following major facility gaps and issues:

- **Comprehensive Emergency Obstetric and Neo-natal Care Unit (CEONC)** – the installation of a CEONC would address the need for CS deliveries
- **Emergency Block** – there is no dedicated Minor OT in the emergency block
- **Nutrition Service** – there is no facility for a Nutrition Service
- **Waiting areas** - interior waiting areas are inadequate, given the numbers of users.
- **Laundry** – there is no designated laundry unit.

- **Mobility and accessibility** – there is a need for major improvements to accessibility, including replacement of step toilets, provision of universal toilet (disability-friendly)

4.4 Interventions

4.4.1 Operating Theatre / Comprehensive Emergency Obstetric and Neo-natal Care Unit (CEONC)

The introduction of an OT / CEONC will take referral pressure away from higher tier facilities. There are standard designs and estimates for an OT / CEONC which can quickly be produced for consideration by the Provincial MSD.

4.4.2 Electricity supply

The electrical supply and distribution system should be surveyed, any faults identified and repaired. The Solar Power system should be repaired. Should an OT or CEONC be introduced at the hospital there will be a need for a UPS system.

4.4.3 Water supply

The water supply and distribution network should be surveyed, and capacity and demand checked, and upgraded storage system designed and installed. A rainwater capture and storage system should be introduced on site.

4.4.4 Building Defects

A detailed defects survey should be carried out, schedule of defects drawn up, and repairs made to building blocks. Particular attention should be paid to In-patients, Out-patients Department (OPD) and Maternity Block.

4.4.5 X-ray room

The X-ray room should be accessed and surveyed, paying attention to the quality of anti-radiation shielding.

4.4.6 CSSD Block

Consideration should be given to relocating the CSSD service from the roof of the Public Toilet block, after identifying a suitable position for a new facility. The Toilet Block roof has no parapet wall, so access is unsafe. As an immediate safety measure, a handrail / railings should be installed between the CSSD door entrance and the footbridge.

4.4.7 Accessibility and mobility assessment

An accessibility and mobility assessment should be conducted to identify improvements to access to services for people with disabilities. This should lead to a schedule of works to ensure compliance with the NHIDS.

4.4.8 Seismic Hazard

A detailed condition assessment (including non-destructive testing) should be carried out to determine seismic safety requirements. This should be followed by production of design solutions and drawings for retrofitting works (structural and non-structural) as required.

4.4.9 Laundry

The need for a Laundry facility should be confirmed, and if necessary installed at a suitable location. Standard designs, drawings and estimates already exist, and can quickly be developed. The Laundry should be accompanied by a hard-standing drying area located near the facility.

4.4.10 Nutrition

A Nutrition service needs to be introduced at the hospital in line with its Primary B2 status. A suitable design can be produced, subject to confirmation of staff availability.

4.4.11 Integrated Planning and Master Plan

An integrated Master Plan should be drawn up for the hospital, identifying a coherent and rational process of physical development and service improvement. The plan should identify short-, medium- and long-term interventions, taking account of population projections:

- Short-term – from immediate to 2 years
- Medium – 2 to 5 years
- Long – post 5 years

4.5 Development timeframe

The Master Plan will be the guiding document for upgrading the hospital, and its development is an important activity in the coming months. This should also be accompanied by short-term interventions identified above, as well as subsequent works arising from surveys and investigations

4.4.1 Short-term plan

The activities proposed for the short-term plan are required for immediate improvements and smooth running of the hospital. These can be implemented and constructed within a period of 2 years.

- Decision, design, estimates and tender process for installation of OT and / or CEONC
- Detailed condition assessment, including building defects and seismic safety assessment, and production and implementation of programme of works
- Electricity supply survey, and production of programme of works
- Water supply survey, and production of programme of works, with rapid improvement of water storage arrangements and rainwater harvesting
- Accessibility and mobility assessment, and production of programme of improvements
- X-ray room survey and report
- CSSD relocation
- Laundry
- Nutrition
- Production of integrated Master Plan

Medium- and long-term activities will be confirmed after the findings of surveys and development of Master Plan, but could include seismic retrofitting of buildings where required.

4.6 Conclusion

Dullu Hospital is a small but significant unit, well located with access to the Karnali Highway and another main road, as witnessed by the user pressure on the facility. Consequently, at

municipal and sub-regional level it is an important hospital for the dependent population in this area of Karnali province. Preliminary work has already begun, and needs to be accelerated leading to rapid interventions and an integrated Master Plan.