

Cost of Services Study: Methodology And Overview

Joint Regional Workshop
Kavieng, New Ireland Province
May 13-14, 2015

Cost of Services Study Preparation Topics

- Basic Building Blocks
- CoS Linkage To Function Grant Calculation Model
- Source Data Needed For CoSS
- Source Data Calculations
- Data Problems
- Service Delivery Travel Routes
- Sub-National Contribution to CoSS
- Summary of Sub-National Data Field Visit Preparation
- Questions?

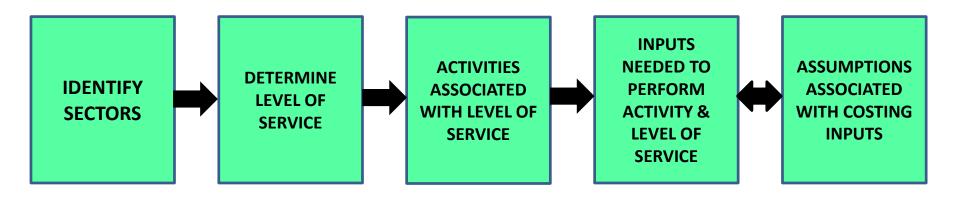
Cost of Services Study Preparation

Basic Building Blocks

Cost Of Services Study Preparation General Methodology and Overview

- The general process for conducting the Cost of Services Study:
 - Pre-Preparation (Desk Preparation)
 - Field Visits
 - Post Field Visits

Cost Of Services Study Preparation Basic Building Blocks



Cost Of Services Study Preparation Basic Building Blocks-Service Delivery Sectors

IDENTIFY SECTORS

- Infrastructure
- Health
- HIV
- Education
- Agriculture
- Fisheries
- Forestry
- Environment

- Community Development
- Commerce & Industry
- Lands Mediation
- Non-Renewable Resources
- Village courts
- Land & Physical Planning
- Disaster Management

Cost Of Services Study Preparation Basic Building-Administrative Sectors

- Office of Administrator
- Internal Audit
- LLG Administration
- Human Resources Development
- Policy, Planning and Research
- Finance and Administration
- Legal Services
- Assembly

Cost Of Services Study Preparation Basic Building Blocks-National Functions

- Provinces expected to fund
 - NBC—operation of provincial radio stations
 - Police—25% of provincial police headquarters operations
 - CIS—50% of provincial prison operations

Cost Of Services Study Preparation Basic Building Blocks-Level of Service

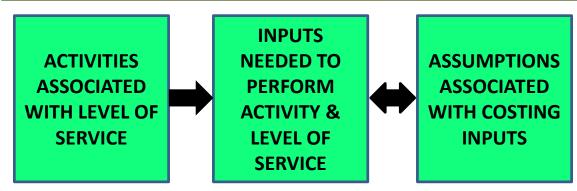
DETERMINE LEVEL OF SERVICE

> Level of Service 'Defined as Basic Services'

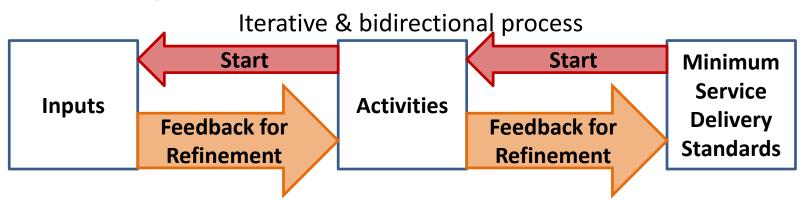
Determined by:

- 1) Governor General's Determination of Service Delivery Functions
- 2) Consultation with National Departments

Cost Of Services Study Preparation Basic Building Blocks-Activities, Inputs, & Assumptions



- In the context of CoSS preparation
 - Determine appropriate activities
 - Appropriate level of activities as determined by:
 - Inputs (resources)
 - Assumptions



Cost Of Services Study Preparation Inputs and Source Data

INPUTS NEEDED TO PERFORM ACTIVITY & LEVEL OF SERVICE INFORMATION/DAT A REQUIREMENTS

This is a critical part of the CoS Study which takes a considerable amount of time to resolve due to data issues

DATA SOURCE: DATA: **INFRASTRUCTURE**

NDoE/NDoH/Village Courts **FACILITIES**

NDoW

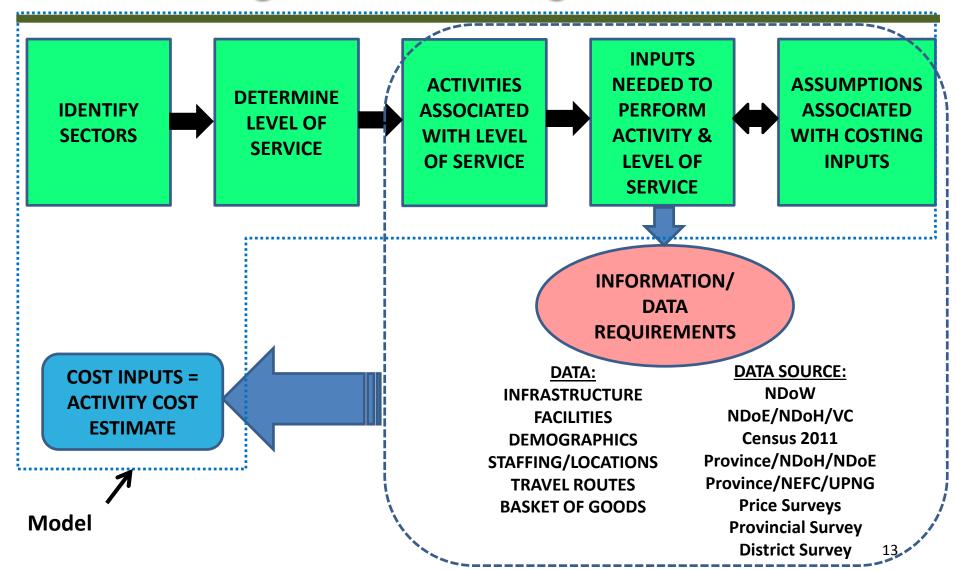
Census 2011 **DEMOGRAPHICS**

Province/NDoH/NDoE STAFFING/LOCATIONS

Province/NEFC/UPNG TRAVEL ROUTES

Price Surveys BASKET OF GOODS District Survey

Cost Of Services Study Preparation Building Blocks and Linkage to CoS Model

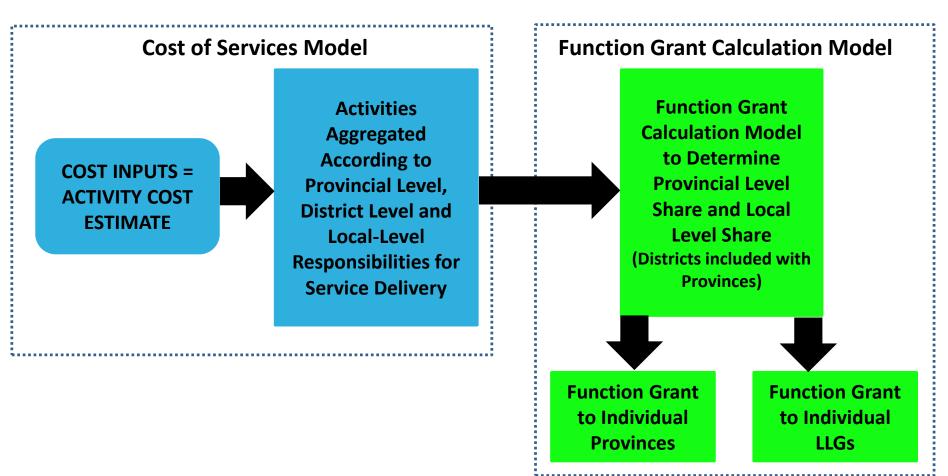


Cost of Service Study

Linkage To Function Grant
Calculation Model

Cost of Services Study Linkage to Function Grants

General Overview



Required Source Data For Cost Of Services Study

- Survey with Department of Treasury:
 - Purpose is to calculate a per-staff consumption (units) for costing at subnational level (proxy)
 - Information Needed:
 - DoT by Section
 - Staffing (Professional, Administrative)
 - Assets (Computers, Printers, Photocopiers, Fax Machines)
 - Consumables (Toners, Pens, Pencils, Notepads, Diary Books, A4 Reams)
 - Telephone Lines (STD)

- Survey of <u>Annual Utility Usage</u> by all National Departments
 - Used as proxy measure for per staff consumption levels at subnational levels
 - Staffing, PNG Power, Telikom, PNG Waterboard, Edu Ranu, PNG Post, Other
 - Want monetized values AND real unit usage (kwhs, cubic metres, etc)

- Infrastructure Data: Roads, Bridges, Wharves, Jetties, Landings, Power Source, Telecommunications (locations as applicable)
- Infrastructure Maintenance Costs from appropriate agencies
 - Wharves
 - Landings
 - Airstrips
 - Roads (sealed/unsealed)

Health

- Number, names and geographical locations of Health Centres and Aid Posts
- Aid Posts Maintenance Costs
- Health Centres Maintenance Costs

Education

- Number, names and geographical locations of Elementary, Primary, Community, High Schools, Secondary Schools and Vocational Schools Secondary Schools Maintenance Costs
- Elementary/Primary Schools Maintenance Costs

- Village Courts
 - Number, names and geographical locations of Village Courts

Pre-Field Visit Data Collection/Preparation Source Data-Other Data Source Collection Methods

- Prices:
 - Airfare prices
 - Other Prices collected in Field: Provincial Survey, District Fuel Spot Prices
 - Basket of Goods Survey
- During Field Visit will have data collection sheets

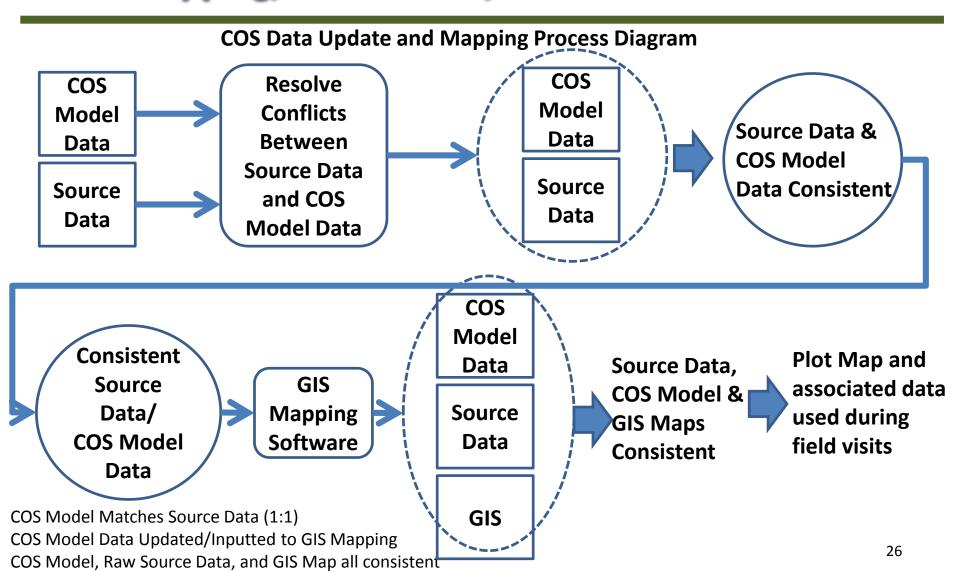
Source Data Calculations

Mapping, Source Data, and CoS Model Data

Cost of Services Study Source Data Calculations

- Source data obtained used in CoS Model to calculate:
 - Costing of the service delivery activities
 - Building maintenance
 - Equipment maintenance
 - Supplies
 - Equipment
 - Allowances
 - Etc
 - Travel Costs to perform the service delivery activities
 - Requires geographical plotting of facilities and infrastructure
 - Travel distances
 - Travel times

- Use of Plot Maps of Provinces and Districts
 - Visual display of facilities, infrastructure, travel routes
 - Want consistency between raw source data and COS Model/Plot Map (facility/infrastructure quantities)
 - 1 for 1 match
 - List of schools (names), approximate location,
 - List of Health Centres, Aid Posts (Names) with approximate locations
 - List of Village Courts (names), approximate locations
 - Facilities along travel routes
 - List of infrastructure (names and locations)



Review: Basic Process to Update COS Data and Plot Maps

- **Step 1**: Output CoS Model Information (facility/infrastructure data)
- Step 2: Compare with updated source data
- **Step 3**: Resolve conflicts ensuring to follow policy (policies need to be determined)
- **Step 4**: Updated CoS Model with updated information (Both province specific input sheets and travel routes***)
- **Step 5**: Update GIS mapping with same information used to update CoS Model
- **Step 6**: Updated GIS Maps and associated data used to update maps are used during Field Visits by Policy Officers

 Similar process also followed after field visit to rectify discrepancies and for consistencies



- Raw data sourced inconsistent with knowledge and/or other collected information (facilities quantities do not match)
- Inconsistencies/incorrect identifying data across multiple data sources (LLGs, Districts, Aid Posts, Codes, School Type, etc?)
- Raw data not always complete
 - Ex: type of school not defined (district/llg missing, codes, etc)
- Significant amount of time and effort expended trying to determine what information (data) to use to update the Cost of Services Model

- The significant amount of time to collect the various information can/may lead to inability of collecting useable information
- Time constraints of the study, given time spent correcting data can/may lead to the inability of collecting any information at all
 - Rectifying this situation sometimes requires indexing previously collected information using Consumer Price Index (CPI)
 - This information needs to be updated making the 2015 CoS more realistic and avoid indexing
 - Use "guestimates" as to what the situation may be at subnational level

- The Data collected and used in costing inputs is crucial in determining costs associated with service delivery by location
- <u>Locations</u> are crucial and directly related to service delivery and associated <u>travel costs</u>
- Travel Costs are determined by travel time, location of service delivery points (distance), mode of travel, local prices
- Therefore, determining travel routes requires a depicted geographical location (facility/infrastructure) and associated travel route for travel cost calculations to deliver service

- Much of the source data collected omits more accurate physical (geographic) locations of facilities
 - May have district and/or LLG named (sometimes this data is missing)
 - Area where facility is physically located needs to be a little more refined to more accurately determine the travel route it is associated and the ensuing costs to deliver the service
 - Closest village and Ward, and/or another physical landmark assists greatly (preferably use village) (LAT/LONG-best situation)
 - Currently rely on the field visits to "fill-in"/ locate on plot maps where a given facility is <u>approximately</u> located
 - Inefficient, but.....

Service Delivery Travel Routes

Issues and Considerations

Pre-Field Visit Data Collection/Preparation Travel Routes

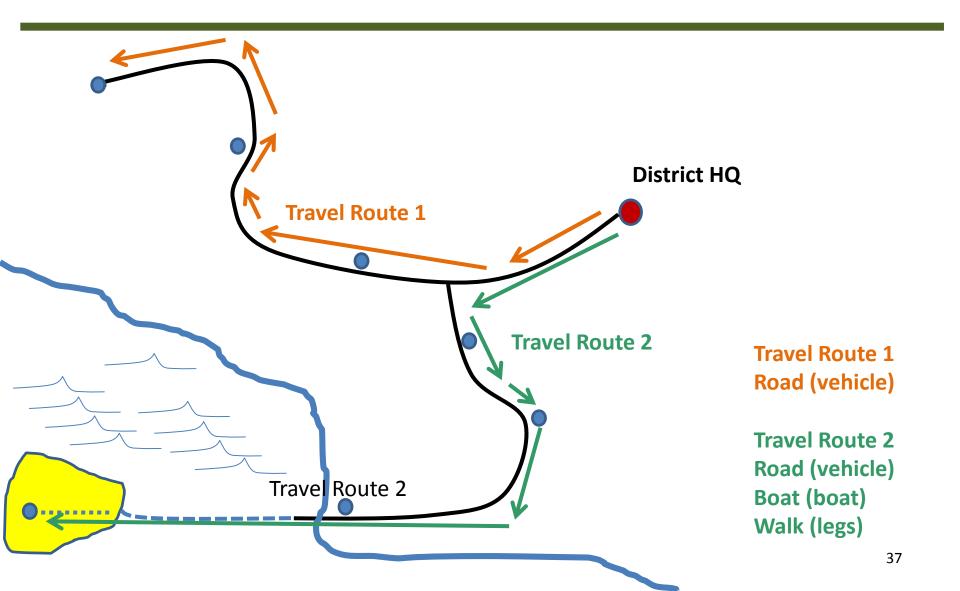
- Travel routes are identified by service delivery points
 - They are central to CoSS and significant consideration for service delivery to occur
 - Translates into significant part of CoS model and hence, calculated costs
 - Routes must match source information and CoS Model for consistency, reliability, and credibility of costing model

Pre-Field Visit Data Collection/Preparation Travel Routes

Travel routes

- Travel routes have a furthest point calculation from origin point and the various facilities located on it for service delivery
- Need geographical reference point location to improve upon where facilities/infrastructure is located
 - Closest village (2nd best situation)
 - Other physical landmark
 - Ward (Not perfect)
 - LAT/LONG Coordinates is best/perfect situation

Travel Route Depiction



Sub-National Contribution to CoSS-Field Visits

- Subnational Levels preparation for NEFC field visits
 - Education Data
 - Health Data
 - Village Court Data
 - Infrastructure Data
 - Bridges
 - Airstrips
 - Jetties, wharves, landings
 - Roads (sealed/unsealed (non-national roads)

 Above will be used for validating, verifying, updating NEFC's information brought to field visits associated with same

- We will ask you to verify our data and assist in rectifying any discrepancies
- Provide additional information that supports subnational level's position of the data and not just indicate, as an example "there are 150 elementary schools located in this district and not 75 elementary schools". We need amplifying information that supports the statement the other facilities exist. If not, they may not be counted.
- We will also conduct:
 - Provincial questionnaire
 - District Survey
 - Local Basket of Goods Survey

- Subnational Field Visits-Assist with verifying, validating, updating the information during field visits that NEFC provides:
 - NEFC Field Visit Information will be in two formats
 - Data lists and plotted maps
 - Education Sector
 - » School Facilities- (Elementary, Primary, Community, Vocational, High, Secondary)
 - School Code, School Name, Geographic Location, Agency Affiliation, status
 - Health Sector
 - Health Centres, Aid Posts
 - Size of HF, location, status

- Village Courts
 - Official Village Court names and locations
 - Want to use official village court name, although may be located in or moves amongst villages/locations to which is has jurisdiction
 - Some village court names NEFC has do not reflect registered names of Village Courts from Village Courts & Lands Mediation Secretariat

- Continued support and consultation on data requests and reconciliation of same and other pertinent matters that may arise in regards to CoSS
- Assist with improving upon processes in both our interests
- Subnational Governments/Sectors also provide data on facilities/infrastructure
- Boundaries

Summary of Subnational Level Data Field Visit Preparation

Subnational Health Data

- Name/location of Health Centres, Aid Posts
- Staffing
- Equipment
- Size of facility
- Maintenance Costs

Subnational Education Data

- Name/Location: Elementary, Primary, Community, Secondary,
 High School
- Enrollments
- Staffing
- Maintenance Costs

Summary of Subnational Level Data Field Visit Preparation

- Subnational Infrastructure Data
 - Facilities: Bridges, Roads (sealed/unsealed), Wharves, Landings,
 Jetties, Airstrips
 - Locations
 - Maintenance Costs
- Subnational Village Courts Data
 - Number/Official Name and physical location (Village, Ward, LLG)
 - Villages/areas falling with VC jurisdiction
- Facilities/infrastructure at a physical location (Closest Village/Ward (if do not have Lat/Long coordinatates)

Summary of Subnational Level Data Field Visit Preparation

- Perhaps any other issue that may arise
 - Data validation

