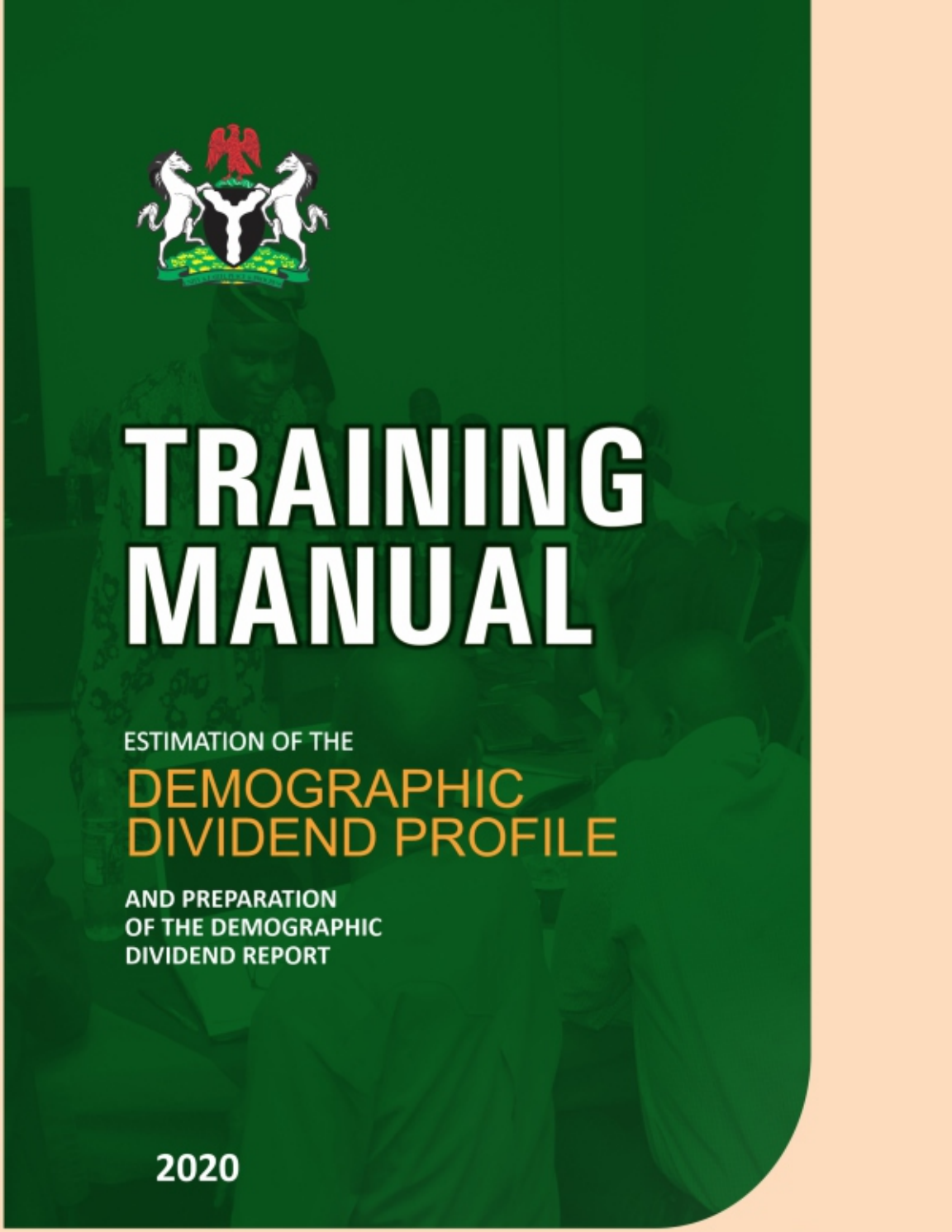

TRAINING MANUAL

ESTIMATION OF THE DEMOGRAPHIC DIVIDEND PROFILE

AND PREPARATION OF THE DEMOGRAPHIC DIVIDEND REPORT

2020

UNFPA

Training Manual

ESTIMATION OF THE
DEMOGRAPHIC DIVIDEND PROFILE
AND PREPARATION OF THE DEMOGRAPHIC DIVIDEND REPORT

By

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2020

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HPTRP, taken at the National and States' Training Workshops for Demographic Dividend Roadmap and Profile Estimations.

The opinions and recommendations in this manual are those of the authors and do not represent the views of UNFPA. It is an independent manual commissioned by UNFPA, Nigeria. The manual is an outcome of the training workshop conducted by Health Policy Training and Research Programme (HPTRP), Department of Economics, University of Ibadan, Nigeria.

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FOREWORD

The National Transfer Accounts (NTA) research project has evolved over the years from one that was primarily academic to one that is driving policies in many countries around the world. The National Transfer Accounts build on overlapping generations models of economics pioneered by Samuelson and many other noted scholars. The basic idea is that societies are built on critical economic linkages across age or generations. Children and seniors rely heavily on intergenerational transfers primarily from working age adults. Moreover, prime age adults accumulate wealth during their working years in order to support themselves when they need to. These flows measured in NTA quantify how different generations within a society cooperate and develop together.

The NTA project has developed systematic, comprehensive and coherent methods for the age disaggregation of the major components of national accounts. NTA has also enriched national accounts by estimating private transfers within households. The NTA approach stands out in many areas. First, the model incorporates age into the system of national accounts such that the GDP can be delineated by the different ages within the population. Second, it focuses on both public and private intergenerational flows and how these flows shape the macroeconomy.

Because the model is a combination of economics and demography, it lends itself to the analysis of various economic and demographic policy options. One of the areas where NTA has been found useful is estimating demographic dividends. NTA shows why demographic dividends vary among countries and how they can be influenced by public policy. This is of particular relevance to many African

countries including Nigeria where the demographic transition is delayed as compared with other regions of the world. The NTA contributes to knowledge in this area by identifying two types of demographic dividends, the first and second dividend. While the first demographic dividend operates through growth in the support ratio, the second demographic dividend operates through the growth rate of output per worker. These tools have proven sufficiently powerful and flexible for NTA to become the preferred methodology for studying the nature, trend and processes of harnessing the demographic dividend especially for countries still in the window of the first dividend.

This manual is intended as a Train the Trainer manual for developing countries that are still within the first dividend window. The manual explains how to compute the age profiles of the National Transfer Accounts flows and to estimate the demographic dividends for different countries. Recently, the methods have been applied to estimate NTA at the sub-national level. The manual builds the basic resource material for estimating NTA published by United Nations Population Division. The emphasis of this new contribution is to provide training guidelines that will help academics and bureaucrats to construct NTA age profiles and to prepare a comprehensive report on their country's Demographic Dividend. The manual also discusses ways through which the National Transfer Accounts can be mainstreamed into the national accounting and government systems.

Although this manual has been produced to facilitate training on the estimation of National Transfer Accounts for different groups and regions of Nigeria, it is our belief that other countries within the NTA network will find the manual useful for their training purposes. It should be especially valuable for training government officials

responsible for estimating the demographic dividend and preparing a demographic dividend report.

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Ronald Lee
University of California at Berkeley

MESSAGE OF THE UNFPA COUNTRY REPRESENTATIVE IN NIGERIA

This manual represents one of the footprints of the United Nations Population Fund (UNFPA) Nigeria's active support to strengthen the capacities of national and sub-national entities for programming to accelerate the process of harnessing the Demographic Dividend (DD). As the lead agency on population and development that is the niche of demographic dividend, UNFPA is delighted to move the process of identifying the dividend gaps and highlighting the investment options necessary for filling these gaps. The African Union had, in 2017, developed a roadmap on DD and directed all the 55 African countries to develop country-specific roadmap and implement policies that will ensure that countries benefit from the demographic window of opportunities and subsequent demographic windows opened unto them. UNFPA has been in the forefront of supporting the African countries including the Nigerian government towards understanding and establishing a framework for implementing the DD principles. Following the publication of the Country's Roadmap for harnessing the DD in 2017, Nigeria had also estimated the Demographic Dividend Profiles for the country in 2018. The profile identified gaps that has to be filled as well as investment options that has to be made for the country to enjoy the demographic dividend.

However, given that the peculiarities of Nigeria indicates that demographic transition are at different levels and pace within the country, it became imperative to have different processes and policies for different 36 States and the Federal Capital Territory (FCT) of the country to be able to fully understand the concept of DD and how to practically operate the term. UNFPA took the initiative to, therefore, not just prepare the roadmap for the different States but

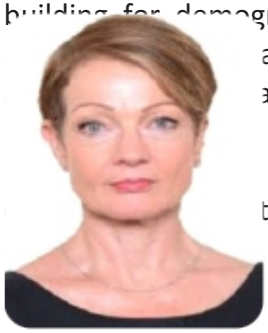
also to estimate the demographic dividend profiles for different States as well as the FCT Abuja. The DD is a product of demographic transition for any country or State. It starts with an increasing pro¬portion of effective income-earners relative to the number of consumers in a population due to shifts in the population age structure.

Since there are 36 States and the FCT in the country, it is important to develop a training manual that will guide every trainer in leading the consultative and collaborative efforts and actions needed to prepare the DD profile in these various States and FCT. The manual presents the different activities to be followed and they are decomposed into three stages: Pre-workshop, Workshop and Post-workshop. The pre-workshop stage is instituted to allow for consultations to be made with relevant stakeholders, to ensure effective workshop logistics. For the workshop stage, the manual outlines the prerequisite software knowledge for the participants and length of days for the workshop to train on the estimation of DD. The manual adopts the National Transfer Accounts (NTA) estimation approach, which is consistent with United Nations (2013) manual for estimating the NTA. The post-workshop stage is meant to validate and finalize the final DD report.

For the purpose of informing policy design and implementation towards harnessing the potential DD, this manual was developed to serve as guidance on the estimation of demographic dividend by various stakeholders, especially policy makers and international organizations. The manual is targeted at the trainers and the trainees. Its content builds on and draws from the training and development of the country's Demographic Dividend Roadmap; the trainings and reports of the DD Profile preparation conducted at the national level as well as Kaduna state, the West and Central Africa

Regional Office (WCARO) demographic dividend programming guidelines and designed to facilitate the adoption, integration and incorporation of the DD into development plan of each state and the country. The manual is designed for training government officials including but not limited to those in the Ministries of Budget and Planning, Health, Education, Women Affairs, Youth and Social Development, Justice and other audiences including private sector who would benefit from the demographic dividend. The training is structured to target the bureaucrats from middle to senior levels of policy-making and government officials from all sectors influencing population policies and demographic indicators.

The manual is an output of our collaboration with the Health Policy Training and Research Programme (HPTRP), Department of Economics, University of Ibadan. This collaboration has allowed us to build strong capacity for demographic dividend at the national level as well as in many States of the federation. Due to the collaboration, a number of the states are already moving forward their own understanding of the demographic dividend principles and implementations. The production and utilization of this manual represents the commitment of UNFPA to further deepen the collaboration with HPTRP and the Government of Nigeria for the success of the demographic dividend programming in the country. I believe that this manual holds one of the keys towards capacity building for demographic dividend in the country. I, therefore, assionate digest among development partners ademia in general.



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This manual was prepared by the Health Policy Training and Research team of the Department of Economics, University of Ibadan, Ibadan, Oyo State, Nigeria. The opinions contained in this manual are strictly those of the authors and do not in any way represent the position or ideas of UNFPA. Interested parties wishing to use any part of this manual must appropriately acknowledge the authors.

The authors have conducted trainings on developing a Roadmap for Harnessing the Demographic Dividend (DD), as well as DD Estimation in Nigeria. These have been done at the national level and in Lagos State, Kaduna State and the Federal Capital Territory. All training participants, consisting of government officials, are duly appreciated for their involvement and constructive feedback. The useful contribution of Professor Adedoyin Soyibo, an international consultant on the National Transfer Accounts (NTA) Project, to this manual is highly appreciated. We are also grateful for the immense support from the UNFPA. In particular, we thank Mr. Osaretin Adonri, the Assistant Country Representative and Mr Andat Dasogot, the National Monitoring and Evaluation Expert and Demographic Dividend Focal Person, for their support.

Olanrewaju Olaniyan
Director, HPTRP, Ibadan

MESSAGE OF THE UNFPA COUNTRY REPRESENTATIVE IN NIGERIA

CONTENTS

Foreword	**iv**
Message of the UNFPA Country representative in Nigeria	**vi**
Acknowledgements	**ix**
Contents	**x**
List of Tables	**xvi**
List of Figures	**xvii**
Acronyms	**xviii**
Introduction, Overview and Background of Demographic Dividend	**01**
SECTION A: PRE-WORKSHOP STAGE	**07**
1. Stakeholders Engagement and Meeting	**08**
2. Human Resources and Data Requirement	**08**
3. Preparation of Logistics	**10**
4. Arrival	**11**
5. Hall Arrangement/Preparation	**11**
6. Preview Meeting of Facilitators	**12**
SECTION B: WORKSHOP STAGE	**13**
Module 1: Introduction: Opening Formalities and Introduction	**15**
• Registration	
• Opening formalities	
• Objective of the Training Workshop	
Module 2: Concepts and Overview of the Demographic Dividend and Estimation Fundamentals	**17**

Session 1: Introduction to Demographic Dividend (DD) **17**

- Concept and Importance of the Demographic Dividend
- Video Presentation on the Concept of Demographic Dividend
- The African Union and Nigerian Roadmap for Harnessing the Demographic Dividend for Youth Development

Session II: Methodological Approaches for estimating Demographic Dividend **17**

- Methodological Approaches for Estimating the Demographic Dividend Estimates
- Comparative Analysis of the Demographic Dividend Estimates
- Video Documentary on Demographic Dividend in Nigeria

Module 3: Concept and Overview of the National Transfer Accounts **22**

- The concept and theory of demography and generational Economy
- The NTA Flow Identity, Economic Life Cycle and Intergenerational transfers
- Examples using the Nigerian NTA estimates
- Extensions to the NTA methodology
  - o Demographic dividend projections
  - o Wealth and Bequests
  - o National Time Transfer Accounts

Module 4: Introduction to Excel, Stata and R Statistical Software **25**

- Basic Fundamentals of Excel Worksheet for calculations and constructing figures
- Basic Statistical Operations using Stata
- Basic Statistical Operations using R software

Hands-on: Basic Fundamentals of using Excel, STATA and R Software

Module 5: Getting Started with the Estimation **28**

- Materials
- Building a micro-level database
- Basic methods for estimation
- Steps to follow in completing the accounts

Hands-on: Familiarization with demographic indicators as well as drawing graphs of population dynamics

Module 6: Situation Analysis of the Demographic, Socio-economic and Governance Context of the State **34**

- Population and Demography of the State (Population size, distribution and growth Including fertility, mortality and migration in the state)
- Economic Structure, Employment Profiles and Development of the State
- Structure of Access, Quality and Financing of Health and Education in the State
- Governance, Rights and Youth Empowerment in the State

Hands-on: Using the Batch file mode (do-file) in STATA software

Module 7: Analysing the Household: Part 1. Public and Private Consumption **37**

- **Session I:** Education
  - o Obtaining the profiles
  - o Adjusting and Soothing

- **Session II:** Health
  - o Obtaining the profiles
  - o Adjusting and Smoothing

- **Session III:** Others Consumption Expenditures
  - o Obtaining the profiles
  - o Adjusting and Smoothing

Hands on: Constructing the Per Capita Consumption Expenditure
Adjusting and smoothing the estimates using the R software

Module 8: Analysing the Household: Part 2. Labour Income **44**

- **Session I:** Wage and Earnings

- **Session II:** Self-employed Income
  - o Obtaining the profiles
  - o Adjusting and Smoothing

Hands on: Constructing the Per capita Consumption Expenditure
Adjusting and smoothing the estimates using the R software

Module 9: The Macroeconomy and Aggregate Control for the variables **48**
- Relationship between NTA and SNA
- Calculating macro-control for each of the Variables

Module 10: Economic Life Cycle Account **52**
- Estimating the Age Profiles
- Finalising the Age Profiles
- Comparing, Summarising and applying both the aggregate and Per capita account profiles

Module 11: Economic Support Ratio and the Demographic Dividends **56**
- Demographic Transition
- Dependency Ratio
- Support Ratio
- First and Second Demographic Dividends

Module 12: Preparation of the Demographic Dividend Report **58**
- Group delineation for the purpose of report writing
- Brainstorming on the outline of the report
- Sharing of roles on the report preparation

Module 13: Presentation and Harmonization of Group Report 61
- Group preparation of the State Transfer Accounts and Demographic Dividend reports according to agreed Chapters
- Presentation of the Revised Groups' Reports
- Harmonization of the Groups' Reports

Module 14: Preparation of the Demographic Dividend Policy Brief 63
- Presentation: How to write a policy brief
- Harmonizing the outlines of the Policy Briefs and the Reports
- Writing the Policy Briefs
- Presentation of the Policy Briefs

SECTION C: POST-WORKSHOP STAGE 67
- Report Writing by Technical Team 68
- Submission of Draft Report 68
- Report Validation 68
- Submission and Publication of the Revised Report 68

BIBLIOGRAPHY 69

APPENDICES 72

TABLES

Table 1:	Training Procedure for Estimating the Demographic Dividend and Preparing the Report	**05**
Table 2:	Personnel for the DD Estimation Workshop	**09**
Table 3:	Description of Activities in Module 1	**15**
Table 4:	Description of Activities in Module 2	**17**
Table 5:	Various approaches used to estimate the Demographic Dividend	**21**
Table 6:	Description of Activities in Module 3	**22**
Table 7:	Description of Activities in Module 4	**25**
Table 8:	Description of Activities in Module 5	**28**
Table 9:	Description of Activities in Module 6	**34**
Table 10:	Description of Activities in Module 7	**37**
Table 11:	Description of Activities in Module 8	**44**
Table 12:	Description of Activities in Module 9	**48**
Table 13:	Description of Activities in Module 10	**52**
Table 14:	Description of Activities in Module 11	**56**
Table 15:	Description of Activities in Module 12	**58**
Table 16:	Description of Activities in Module 13	**61**
Table 17:	Description of Activities in Module 14	**63**

FIGURES

Figure 1: Strategic Pillars for the Nigerian and African Union Demographic Dividend (DD) Roadmap and UNFPA Programming Guide **20**

Figure 2: Building the micro-level database for NTA Estimation **32**

Figure 3: Steps to follow in completing the National Transfer Accounts **33**

Figure 4: Schematic of flow accounts in the System of National Accounts **50**

Figure 5: Steps for constructing the Economic Life Cycle Accounts **50**

ACRONYMS

DD	Demographic Dividend
NTA	National Transfer Accounts
MDAs	Ministries, Departments and Agencies
UNFPA	United Nations Population Fund
UN	United Nations
HDI	Human Development Index
GDP	Gross Domestic Product
SNA	System of National Accounts
NPISH	Non-profit Institutions Serving Households
HPTRP	Health Policy Training and Research Programme

INTRODUCTION, OVERVIEW AND BACKGROUND

Procedure for Estimating the Demographic Dividend and Preparing Associated Demographic Dividend Report

Sustainable development is accelerated when all category of citizens (men and women, as well as boys and girls) can legitimately expand their capabilities, adequately secure their reproductive health and rights, and be employed in decent work. The demographic dividend (DD) essentially focuses on benefits arising from the changing structure of the population, which occur in different phases and for different durations. These benefits become rapid with low dependency ratio as the proportion of a country's working age population becomes greater than the proportion of its dependants (children and the elderly) (Drummond, Thakoor & Yu, 2014). This population structure allows a country to free up resources for further investment in productive activities for economic growth.

According to Lee and Mason (2006), the demographic dividend occurs in two stages. The first demographic dividend occurs in the early stage of demographic transition when fertility rates fall, leading to fewer young mouths to feed. During this period, the labour force grows temporarily and more rapidly than the population dependent on it, which makes available more resources to channel to education, family welfare, reproductive health and employment. Thus, the first DD arises from an increase in economic growth associated with a reduction in both fertility and mortality. However, due to the inability of fertility to decrease indefinitely, the first DD is temporal. The second demographic dividend occurs when a population concentrates at older working ages who face an extended period of retirement with incentive to accumulate assets. This dividend arises as returns from investment increases income from the first DD in both human and physical capital. This therefore calls for the right policies to harness potential DD by various countries.

This manual is aimed at providing guidance on the estimation of DD by various stakeholders, especially policy makers and international organizations, for the purpose of policy design and implementation towards harnessing the potential of the DD. The manual builds on and feeds into the Demographic Roadmap that identifies possible investment pillars to harness the DD. This manual aims to facilitate the adoption, integration and incorporation of the DD into each state and country's development agendum. This manual received input from the successful DD estimation workshop and training conducted in some states in Nigeria. Thus, it was pretested and feedback from participants and trainers have been incorporated into the content of the manual.

This manual was prepared to serve as a resource for training to increase understanding of the issues surrounding the demographic window of opportunity and prepare a detailed Demographic Dividend Report for a federal, regional or local government. Specifically, it will build the capacity of government officials on the status of the demographic window of opportunity. Since the Demographic dividend concept covers different ministries, departments and agencies, the training workshop proposed in this manual will encourage engagement and collaboration across different sectors as well as facilitate the exchange of experiences and lessons learned. The target audience for this manual are the trainers and the trainees. The DD trainer is someone who has been formally trained in the methodology and rudiments of estimating DD with a broad knowledge of the meaning, methodology and modifications of the DD. The trainees, who are public servants, are expected to have deep experience in governance, workings of the private sector and policy making. The manual can therefore be used to train government officials, including but not limited to those in

the Ministries of Budget and Planning, Health, Education, Women Affairs, Youth and Social Development, Justice, and other audiences who would benefit from the DD and be instrumental to the incorporation of the DD into integral parts of policymaking. The training is structured to target professionals from middle to senior levels of policy-making and government officials from all sectors influencing population policies and demographic indicators.

This training manual presents guidelines on how to introduce the concepts and methodology of DD in a user-friendly manner. The main approach to estimating DD used in this manual is the National Transfer Accounts (NTA), which is consistent with the United Nations' choice (2013). The manual provides the trainers with the theoretical and practical information required to effectively train a team in estimating DD at all levels (regional, national or state). The manual also ensures that key stakeholders and policy makers are not only aware of but also have sufficient knowledge about DD, understand the need for a DD estimation and are willing to integrate the findings of the brainstorming sessions into policy making.

The approach to the training workshop on DD estimation is expected to be more practical, but also technical, and requires knowledge of some software, such as Microsoft Excel, 'R' and 'Stata'. Estimating DD therefore requires both human and computer resources, necessitating that participants have some level of computer skills. The training workshop, which should last at least 12 days, has two main aspects: training and estimation of DD. The entire training should be undertaken in three stages: Pre-workshop, workshop and post workshop, as highlighted in Table 1.

Table 1: Training Procedure for Estimating the Demographic Dividend and Preparing the Report

Stage	Objective	Outcome
Pre-workshop Stage	To thoroughly engage the appropriate ministry responsible for Budgeting and Planning for the country, region or state. This engagement is essential to consolidate on the roadmap through estimation of the DD. Consultations are made with relevant stakeholders, and sensitization campaigns and awareness creation embarked upon for the senior staff and top government officials responsible for creating, executing and monitoring government programmes and activities. The modalities for the workshop and post workshop are also discussed, including location, funds, duration etc.	A successful pre-workshop engagement entails effective workshop logistics, support from government through the relevant ministries and agencies and effective mobilization of quality human, financial and material resources. Adequate provision of required computer software.
Workshop Stage	To have quality and engaging interaction between the facilitators (those knowledgeable about the DD estimation) and the trainees (those knowledgeable about the situation of the nation, region or state) to harness their expertise in estimating the DD.	Successful workshop activity will ensure that the participants are able to estimate DD, write reports, write policy briefs and adequately inform policy design.
Post-workshop Stage	To conduct a thorough review of the DD estimation report. To edit, print and disseminate the report to all key stakeholders.	Successful post-workshop activity will produce a final printed copy of the validated DD report, with duly assigned responsibilities and timelines and an appropriate monitoring and evaluation framework.

SECTION A

PRE- WORKSHOP STAGE

1. Stakeholders Engagement and Meeting

The training is expected to be preceded by a meeting of stakeholders (technical team, sponsor and lead MDA) to discuss the roles of each party and individuals before and during the workshop. The meeting should agree on the date and duration of the workshop, venue, accommodation of participants, transportation of participants and logistics, and the invited guests among other vital issues. Usually all stakeholders in the development of the DD Roadmap are to be consulted and represented during the workshop.

2. Human Resources and Data Requirement

The key stakeholders and policy makers in different sectors of the economy and the MDAs form the required human resources for the training and estimation of DD. The team should comprise senior staff members delegated with oversight functions in key areas that are relevant to DD. These areas include population, education, employment, health, security, information and communication technology (ICT), youth development, information, justice and governance. Participants, who should include both physical and virtual members, are expected to possess core competency in data analysis, report writing, baseline preparation and have access to the required information and data. Participants must be in close contact with the relevant staff of the respective MDAs should there be the need for information that is not readily available during the workshop. This team has the responsibility of estimating the DD and developing the final report that will enhance the ability of the nation or state to harness the benefits of the DD. The inclusion criteria for the estimation of DD and report writing team are:

- Adequate knowledge of the policies and programmes of the MDA being represented
- Access to statistics and data from the MDA being represented
- Contact details of all members of the MDA with necessary information
- Ability to effectively use Microsoft Office (Word, PowerPoint and Excel)
- Possession of good analytical and writing skills
- Ability to effectively work in a team

In view of the above criteria, the distribution of the participants that are expected to be physically present at the workshop according to their MDAs are presented in Table 2. Also, given the intensity of the assignment, the participants should be a mix of senior and management staff of MDAs. The Ministry of Planning will provide the Secretariat for the Workshop.

Table 2: Personnel for the DD Estimation Workshop

MDAs	Number
Ministry of Planning and Budget (Planners)	7
Bureau of Statistics (Statisticians)	**5**
Presidency/Governor's Office*	1
Ministry of Health **(With good knowledge of Private Hospitals and Health Insurance)**	2
Hospital Management Board	1
Primary Healthcare Board	1
Ministry of Education (With good knowledge of Private Schools and Informal Education)	2
State Universal Education Board (SUBEB)	1
Post-Primary Teaching Service Commission	1
Ministry of Women Affairs and Social Development ✓ **Skill Acquisition Policies and Programmes** ✓ **Social Protection Policies and Programmes**	 1 1
Ministry of Youth and Sports	1
Ministry of Justice	1
Ministry of Finance	2

Ministry of Information and Strategy	1
Ministry of Agriculture and Rural Development ✓ Skills Acquisition Policies and Programmes ✓ Rural Development	 1 1
	30

* Participant from Presidency/Governor's Office should be a high-ranking officer who can influence decision making in the governance structure of the country/state.

3. Preparation of Logistics

Prior to the commencement of the workshop, all items of logistics should be in place, preferably a day before arrivals. The following materials and facilities are expected to be provided:

a) A considerably large conference room with adequate wall and floor space for line-ups and break-out groups. The room should be well ventilated (preferably with air conditioning - AC) and have adequate lighting. A separate room (or enough space) should also be considered for a focus/syndicate group role and discussions.
b) Flip charts (facilitators to decide the quantity) with stands, tapes and markers.
c) Projector, screen, cables, and power boxes to allow multiple electrical connections.
d) Central laptop computer and printer for administrative purposes
e) Computers installed with 'R' and 'Stata' software for all participants and facilitators
f) Training package including pen, notepad and others (to be decided by stakeholders)
g) Attendance Sheet and participant information note
h) Evaluation form

I) Name tags and workshop agenda should be prepared before the workshop

j) All issues of accommodation, refreshment and feeding must be settled before the arrival of participants.

k) Other materials as deemed necessary

4. Arrival

All participants and facilitators are expected to arrive a day before the workshop commences. This will allow ample time to check-in, relax and recover fully from travels, and be well motivated for the workshop. It will also allow good time for preparations and hall arrangement.

5. Hall Arrangement/Preparation

The conference room is expected to be neat and arranged for convenience of all participants and effective delivery. This should also be done a day before the commencement of the workshop.

I. There should be extra seats provision and adequate spacing between seats for free movement. Oval seat arrangement is suggested for compactness and to allow good eye contact among participants. Light reflection and power source must also be considered during the arrangement.

ii. The projector and the screen should be prepared and tested.

iii. The administrative area should be prepared, with a computer and printer, not too far from the participants

iv. All power-boxes to be installed and tested

v. Tables for tea breaks should be arranged.

6. Preview Meeting of Facilitators

Facilitators should meet before the arrival day closes to further discuss the modalities of the workshop and put things in perspective. Among other things, the following should be discussed:

i. Time to report to the conference room. Facilitators are advised to report at least 30 minutes before the start of the opening formalities.
ii. Assign special duties to each facilitator where necessary
iii. Moderators are assigned for each module/day.
iv. Discuss the agenda for the workshop
v. Discuss other matters that may arise

SECTION B

WORKSHOP STAGE

Summary of Modules for the Workshop

Module 1: Introduction: Opening Formalities and Introduction

Module 2: Concepts and Overview of the Demographic Dividend and Estimation Fundamentals

Module 3: Concept and Overview of the National Transfer Accounts

Module 4: Introduction to Excel, Stata and R Statistical Software

Module 5: Getting Started with the Estimation

Module 6: Situation Analysis of the Demographic, Socio-economic and Governance Context of the State

Module 7: Analysing the Household: Part 1. Public and Private Consumption

Module 8: Analysing the Household: Part 2. Labour Income

Module 9: The Macroeconomy and Aggregate Control for the Variables

Module 10: Economic Life Cycle Account

Module 11: Economic Support Ratio and the Demographic Dividend

Module 12: Preparation of the Demographic Dividend Report

Module 13: Presentation and Harmonization of the Group Report

Module 14: Preparation of the Demographic Dividend Policy Brief

Module 1: Introduction: Opening Formalities and Introduction

- Registration
- Opening formalities
- Objective of the Training Workshop

This is the Introductory Session for the training workshop. Registration of participants should start an hour before the opening formalities. All participants must register and they must use their name tags throughout the workshop. The workshop package should also be given during the registration.
Table 3: Description of Activities in Module 1

Table 3: Description of Activities in Module 1

Activity	Description
Objectives	• To officially open the workshop, present the facilitators, welcome the facilitators, participants and other visitors • Encourage participants to interact • Build consensus on workshop objectives and expectations • Decide the rules guiding participants' conduct during the workshop, as well as sanctions for defaulters.
Persons in Charge	• Representative of the government • UNFPA representatives • Head of the technical team • Participants • Facilitators
Content	• Workshop objectives • Participants' introductions • Description of the framework for delivering the training workshop
Handout/ Reading Materials	• Training Manuals • Agenda for the Training • Pretraining and Post-training Evaluation Forms

Format of Activities for Delivering the Module	• Participants' discussion and 'Remarks by Government and Sponsors of the Training • Assign a moderator among the facilitators to moderate the programme for the day. • Assign two participants as rapporteurs. • Ensure that the moderator is well-suited and prepared for the role, and is familiar with the programme for the day. • Encourage guests to remain for the rest of the workshop opening programme. • Ensure orderliness with adequate provision for directing visitors to their seats.
Session Outline (60 minutes)	• Opening statement: 5 minutes • Welcome remarks by different agencies and sponsors: 15 minutes • Participants' introductions and Expectations from the Workshop: 20 minutes • Review of workshop objectives and Expectation from the workshop from the perspective of the organizers: 15 minutes • Setting up of Ground Rules for participants: 5 minutes
Hands-on Practices and Exercises	Completion of the Pre-workshop evaluation form using the Google form

Summary of Knowledge Material for Module 1

All participants get fully registered for the workshop: The registration procedure will involve obtaining full information about each of the participants, including their designation and the MDAs they are representing. A daily register is made available for all participants to sign each day, to ensure full participation.

Workshop materials distributed to participants: Materials for writing and taking notes as a package including a notepad, file pack, pen, nametag, etc.

Official opening of the ceremony takes place: A top official of the state is expected to declare the workshop open before the full activities begin. Other stakeholders and the development partner (UNFPA) will make short remarks.

Module 2: Concepts and Overview of the Demographic Dividend and Estimation Fundamentals

Session 1: Introduction to Demographic Dividend (DD)

- Concept and Importance of the Demographic Dividend
- Video Presentation on the Concept of Demographic Dividend
- The African Union and Nigerian Roadmaps for Harnessing the Demographic Dividend for Youth Development

Session II: Methodological Approaches for Estimating the Demographic Dividend

- Methodological Approaches for Estimating the Demographic Dividend Estimates
- Comparative Analysis of the Demographic Dividend Estimates
- Video Documentary on Demographic Dividend in Nigeria

Table 4: Description of Activities in Module 2

Activity	Description
Objectives	• To teach the fundamental concepts of demographic dividend, and the various methods of estimation of the demographic dividend. • To identify the key variables in the estimation of the demographic dividend. • Provide the profiles of different estimates of the demographic dividend in Nigeria and other countries of the world • Highlight the implications of the demographic dividend profiles for the development of different countries
Content	• Concept and Methodology of the Demographic Dividend • African Union and Nigerian Demographic Dividend Roadmaps
Handout/Reading Materials	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 1 (Pages 1-24)
Format of Activities for Delivering the Module	• PowerPoint presentations • Video presentations • Brainstorming, Discussions, Question and Answer sessions

Session Outline (60 minutes)	***Session 1: Introduction to the Demographic Dividend (DD)*** • Video Presentation on the concept of Demographic Dividend - *20 minutes* • The African Union and Nigerian Roadmap for Harnessing the Demographic Dividend for Youth Development - 45 minutes • Discussions, Questions and Answers - 25 minutes ***Session II: Methodological Approaches for Estimating Demographic Dividend*** • Video Documentary on Demographic Dividend in Nigeria • Methodological Approaches for Estimating the Demographic Dividend - 25 minutes • Comparative Analysis of the Demographic Dividend Estimates - 25 minutes • Discussions, Question and Answer sessions - 20 minutes
Hands-on Practices and Exercises	Familiarization with the population data for the state and preparation of some important demographic indicators

Summary of Knowledge Material for Module 2

a. What is Demographic Dividend?

Video and PowerPoint presentations should be shown to illustrate what the demographic dividend is, and why it is important for countries to invest in its major pillars. The demographic dividend arises as societies progress through demographic transition. This transition initially sees mortality, particularly among children, decline, giving rise to unusually large cohorts of children (Bloom et al., 2000). There are two components of the demographic dividend (Mason and Lee, 2006). The first dividend is a temporary increase in the share of the population that is of working age and it is by increases in the ratio of producers to consumers in the population. The second dividend usually comes in succession to the first and is related to the creation of wealth that arises in response to population aging. Studies have shown that the demographic dividends are not automatic and depend on institutions and policies to reflect the changes in population age structure in economic growth (Mason and Lee, 2006).

b. Comparative Analysis of Demographic Dividend Estimates

This section should present a brief introduction to DD, continent-wide projection of key variables, comparing variables across countries and continents, and population structure. It should also show the comparison of support ratio and DD estimates across regions and countries, with implications and actions.

c. Methodological Approaches for Estimating Demographic Dividend

The presentation in this section should cover the essentials of economic life cycle, first and second demographic dividends, comparative analysis of demographic dividend estimates, steps in the production of a demographic dividend, potential impacts of the DD, and capitalizing on the DD, accompanied with key messages.

Hands-on activity

This activity is expected to be hands-on. All participants are expected to be involved in identifying the required variables from the relevant survey documents. These variables include labour income and consumption.

Figure 1: Strategic Pillars for the Nigerian and African Union Demographic Dividend (DD) Roadmap and UNFPA Programming Guide

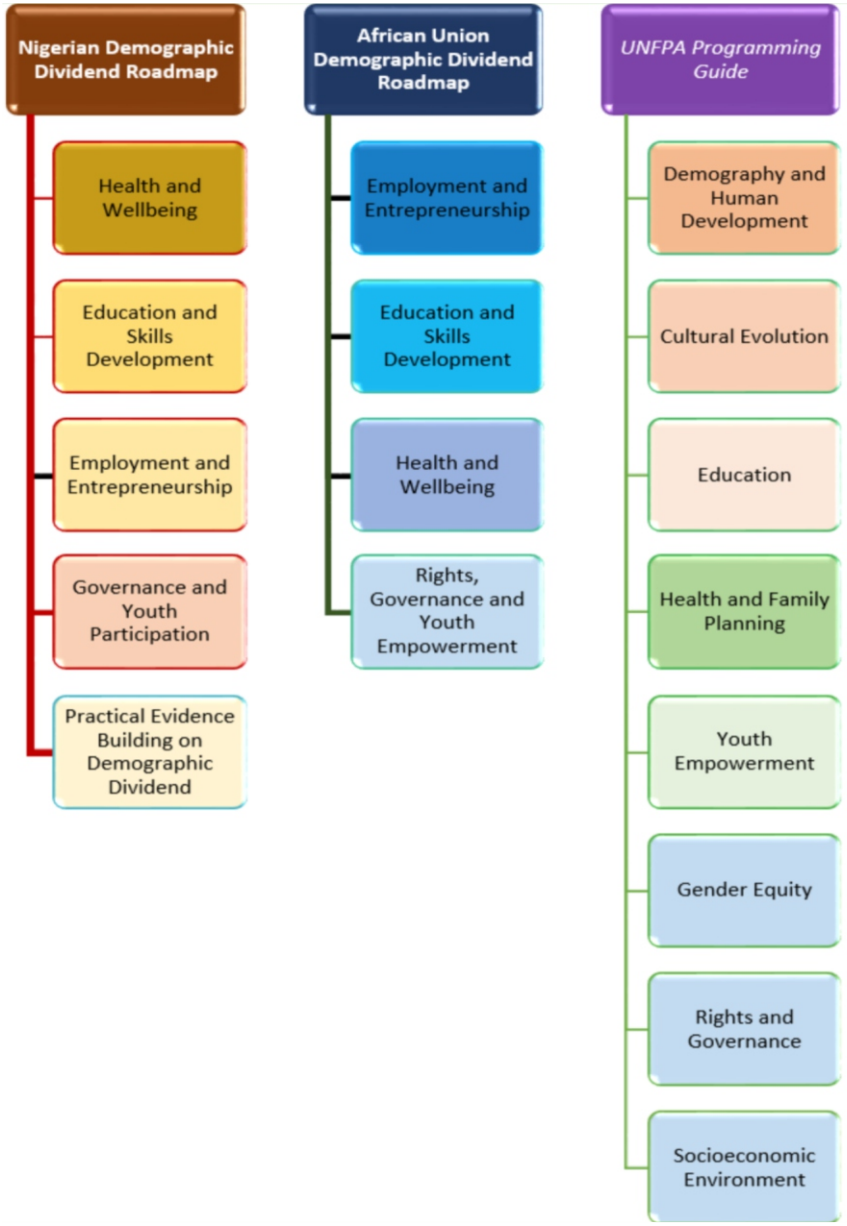


Table 5: Various Approaches Used to estimate the Demographic Dividend

Name	Description	Institution	Year
Linkage	Macroeconomic Simulation model that shows the impact of fertility/population growth on poverty, jobs and equity	World Bank	2016
National Transfer Accounts (NTA)	A system of analysing how resources are produced, consumed, saved and transferred by and between generations	UN Population Division	2007
DemDiv	Cross-national, customizable model to project mortality, HDI, GDP/capita, employment	Health Policy Project	2014
Four Dividends	Models changes in fertility in terms of four endpoints (growth, survival, education, political stability)	Pace Project	2018
FP-SDGs	Allows modelling of medium and long term effects of Family Planning on health and non-health SDGs (including poverty)	Health Policy Plus Project	2018
Karra-Canning-Wilde	Demographic-economic macro simulation model; looks at pathways of FLFP, schooling, health, savings and three-sector labour market	Academic	2017

Module 3: Concept and Overview of the National Transfer Accounts

- The concept and theory of demography and generational economy
- The NTA Flow Identity, Economic life cycle and Intergenerational transfers
- Examples using the Nigerian NTA estimates
- Extensions of the NTA methodology
  - o Demographic Dividend Projections
  - o Wealth and Bequests
  - o National Time Transfer Accounts

Table 6: Description of Activities in Module 3

Activity	Description
Objectives	• To understand the fundamental concepts of the National Transfer Accounts • To identify the key steps to follow in estimating the National Transfer Accounts • Understand the NTA profile for Nigeria compared to other countries of the world • Highlight the importance of NTA for demographic dividend analysis
Content	• The concept and theory of demography and generational economy • The NTA flow identity, Economic life cycle and Intergenerational transfers
Handout/ Reading Materials	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 2 (Pages 25-54)
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions, Question and Answer sessions
Session Outline (60 minutes)	• The concept and theory of demography and generational economy • The NTA flow identity, Economic life cycle and Intergenerational transfers • Examples using the Nigerian NTA estimates • Discussions, Question and Answer sessions
Hands-on Practices and Exercises	Familiarization with the state's survey data and variables needed the NTA estimates

Summary of Knowledge Material for Module 3

- The concept and theory of demography and generational economy
- The NTA flow identity, Economic life cycle and Intergenerational transfers
- Examples using the Nigerian NTA estimates

National Transfer Accounts

The scope of the NTA methodology essentially covers issues such as goals of the NTA project, coverage objectives, importance, organization, participating countries and conceptual foundations (economic, demographic and combination). Other areas include the advantages of NTA over similar methodology, population age structure, the economic life cycle, population age distribution, aggregate life cycle, implications of age structure and economic life cycle, important features of the NTA, and the flow account Identity. The National Transfer Accounts (NTA) help users to understand and analyse the consequences of changes in the population age distribution by estimating many aspects of economic behaviour by age. NTA results are presented most simply and effectively in charts and graphs.

The fundamental feature of all societies, which motivates the NTA project, is the economic life cycle. The economic life cycle refers to patterns of consumption and earnings across age that lead to a mismatch between material needs and the ability to satisfy those needs through own labour income. In all contemporary societies, the young and the old consume more than they produce on the average, whereas the working-age adults consume less than they produce through their labour.

This is an important aspect of population dynamics as transition occurs between age groups. It is important to understand how societies deal with age or generational issues for certain reasons. First, children and many older persons are vulnerable, and poverty and inequality may depend on how successfully the material needs of these groups are being met. Second, defining age is changing, as the young are staying in school longer and enter late into the labour force, while the elders are healthier and less likely to be disabled. This is changing the nature of investment in the health and education of children. Third, continued economic progress will depend, largely, on the generational economy. The various responses to population ageing may also affect savings, the accumulation of capital, and the productivity of the work force. Fourth, the sustainability of support systems may be threatened by policies that fail to accommodate economic pressures arising from changes in population age structure. Fifth, changes in consumption patterns and public programmes raise concerns for intergenerational equity.

The National Transfer Accounts (NTA) help us understand and analyse the consequences of changes in the population age distribution by estimating many aspects of economic behaviour by age. NTA results are presented most simply and effectively in charts and graphs. Life cycle deficit can, therefore, be expressed as:

$$\underbrace{C - Y_l}_{\text{Life cycle deficit}} = \underbrace{\underbrace{Y_A - S}_{\text{Asset-based reallocations}} + \underbrace{\underbrace{\tau_g^+ - \tau_g^-}_{\text{Net public transfers}} + \underbrace{\tau_f^+ - \tau_f^-}_{\text{Net private transfers}}}_{\text{Net transfers}}}_{\text{Age reallocations}}$$

Module 4: Introduction to Excel, Stata and R Statistical Software

- Basic Fundamentals of Excel Worksheet for calculations and constructing figures
- Basic Statistical Operations using Stata
- Basic Statistical Operations using R software

Hands-on: Basic Fundamentals of using Excel, STATA and R software

Table 7: Description of Activities in Module 4

Activity	Description
Objectives	• To understand how to input numbers, make calculations and construct figures in Excel • To understand how to enter data into Stata and perform simple Stata operations • To understand how to enter data into R Software and perform simple R operations
Content	• Using Excel • Stata Fundamentals • R Fundamentals
Handout/ Reading Materials	• Poole B., Jackson L. and Randall R. (2002). ESSENTIAL MICROSOFT OFFICE XP: Tutorial for Teachers. http://www.pitt.edu/~edindex/OfficeXPTutorials/Lesson4XP.pdf • California State University (2005). Using Microsoft Office 2003: Introduction to Excel Handout. Information Technology Services, California State University, Los Angeles. https://www.lisd.org/technology/itswebs/elem/tech/handouts/excel03.pdf • Paradis E. (2005). R for Beginners. Institut des Sciences de l'Evolution, Université Montpellier II • Venables W.N., Smith D.M. and the R Core Team (2020). An Introduction to R. The R Core Team • Lembcke A. C. (2010). Introduction to Stata. CEP and STICERD, London School of Economics • McGovern M. E. (2012). A Practical Introduction to Stata. Harvard Center for Population and Development Studies, Geary Institute and School of Economics, University College Dublin

Format of Activities for delivering the Module	• PowerPoint presentations • Interactive Discussions, Question and Answers

Session Outline (60 minutes)	• Using Excel
	  • Creating and inputting data into Excel files
	  • Performing simple computational operations in Excel
	  • Construction of graphs and charts with Excel software
	• Stata Fundamentals
	  • Transferring files to Stata
	  • Stata windows
	  • Use of commands
	• R Fundamentals
	  • Transferring files to R environment
	  • R environment
	  • Use of commands
	• Discussions, Question and Answer session

Hands-on Practice and Exercises	• Basic Fundamentals of Excel Worksheet for calculations and constructing figures • Basic Fundamentals of Stata and R operations

Summary of Knowledge Material for Module 4

The presentation should first teach how to get started with the Excel worksheet. This will include a description of a few menu items, inputting data, transferring files, creating a spreadsheet, and saving files. A spreadsheet is a grid divided into columns and rows. The following key elements must be demonstrated:

i. Moving around in the spreadsheet
ii. Identifying the active cell's coordinates
iii. Selecting a range (group) of cells
iv. Location of an active (selected) cell after inputting data into it
v. Blanking out a cell or cells in the spreadsheet
vi. Editing data
vii. Creating and copying simple formulas

The presentation should also demonstrate how to transfer files into Stata format including manual entry, pasting on the data editor or importing from another format such as SPSS or Excel. It should further describe the Stata windows. Subsequently, the presentation should demonstrate how to get started, including the use of simple commands. Similar activities should also be demonstrated in the fundamentals of R in terms of linking it with Excel files and performing smoothening operations on data series. Ample time must be devoted to the practicals and interactives.

Module 5: Getting Started with the Estimation

- Materials
- Building a micro-level database
- Basic methods for estimation
- Steps to follow in completing the accounts

Hands-on: Using the Batch file mode (do-file) in STATA and Codes in R Software

Table 8: Description of Activities in Module 5

Activity	Description
Objectives	• To understand the fundamental concepts of the National Transfer Accounts • To identify the key steps to follow in estimating the National Transfer Accounts • Understand the NTA profile for Nigeria compared to other countries of the world • Highlight the importance of NTA for demographic dividend analysis
Content	• Materials • Building a micro-level database • Basic methods for estimation • Steps to follow in completing the accounts
Handout/Reading Materials	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 3 (Page 55-70)
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions, Question and Answer session
Session Outline (60 minutes)	• Presentation on the materials and resources needed for computing the National Transfer Accounts and the Demographic Dividend • Discussions, Question and Answer session
Hands-on Practices and Exercises	• Familiarization with the usage of the Batch file mode (do-file) in STATA and Codes in R software

Summary of Knowledge Material for Module 5

Although NTA can be constructed by an individual, it is helpful to have more than one person working on the estimates. The following are the materials needed for the computation of the National Transfer Accounts and the Demographic Dividend.

Human Competence Requirements

Facilitators are expected to be well experienced in using national survey data and be familiar with computing strategies for dealing with large data sets, for using sample weights and for programming complex algorithms. It is important that the facilitators be able to use spreadsheets as that is an important way in which the NTA project shares final results. In addition, members of the NTA teams must be proficient in the use of the Stata statistical software package as well as the smoothing tools from the R statistical programming language. R can be acquired for free at (http://www.r-project.org/). Estimates should be produced using computer code that is saved in programs. This allows estimates to be re-run, as saved programs make it easier to reproduce results, correct mistakes and incorporate future methodology improvements or corrections. Facilitators should also be familiar with national accounting and the public sector of their country, region or state.

Usually, data required for estimating the demographic dividend exhibit some uncertain characteristics. There may be outliers and/or unusual spikes in the data and estimates. In particular, the required age data is extracted from survey data and is characterized with a great deal of noise arising from sampling variation and other sources of error. There is therefore the need for smoothening of the series generated, with the exception of the education data. Macro adjustment should be done. One scaling factor should be used to

adjust the age pattern up or down by the same factor at each age. Per capita and aggregate estimates should be generated.

Data Requirements

Three types of data are required for the construction of the NTA:

a) population data,
b) national account data and
c) household survey data on economic flows by age.

Population data

Population counts are given by single year of age, from age zero to a desired maximum age of 90+ or older and must be:

- Representative of the entire population including students, military and institu¬tionalized populations (such as residents of nursing homes); and
- Corrected for any data problems such as age heaping or under-reporting of certain age groups.

National Accounts Data

National accounts data are used to construct NTA aggregate controls, also called macro controls, which are used to scale NTA age profiles. Many countries use the United Nations System of National Accounts (SNA) to guide con¬struction of their national accounts and organize their reporting. In line with this practice, this manual will discuss national accounts based on SNA estimates and concepts. In Nigeria, the national accounts are produced by the National Bureau of Statistics. Data that must be obtained from the National Accounts are:

- GDP by expenditure approach (includes final consumption expenditures, capital formation and external balance);
- GDP by income approach (includes compensation, operating

surplus and mixed income);
- Allocation of primary income account (by sector);
- Secondary distribution of income account (by sector);
- Use of disposable income account (by sector);
- Final consumption expenditures of households;
- Change in net worth (by sector);
- Simplified accounts for general government, households, non-profit institutions serving households (NPISH) and corporations;
- Saving and net lending/borrowing (by sector).

Household Surveys

Household surveys should be nationally representative and must have a designated household head or enough data to impute headship by assumption to one and only one individual in the household. The households must be of sufficient sample size to estimate detailed age patterns.

The survey must have comprehensive information on the following:

- A roster of household members with their age (preferably in single years to a maxi-mum of 90+ or older), sex, and their work/school status;
- Income and other forms of revenue; and
- Consumption and other kinds of expenditure.

How to Build a Micro-Level Database

The NTA is a data-intensive process. It is therefore important to spend some useful and productive time in building a micro-level database, which is a way to combine all necessary data from various sources into one dataset at the individual level such that it can be used to estimate the age profiles

The following five steps are useful in building the micro-level database

Step 1: Identify your main household survey

Step 2: Merge household-level items into individual-level data

Step 3: Create NTA variables from your main household survey

Step 4: Merge data from other sources into the micro-level database

Step 5: Create national-level information in the database

Figure 2: Building the micro-level database for NTA Estimation

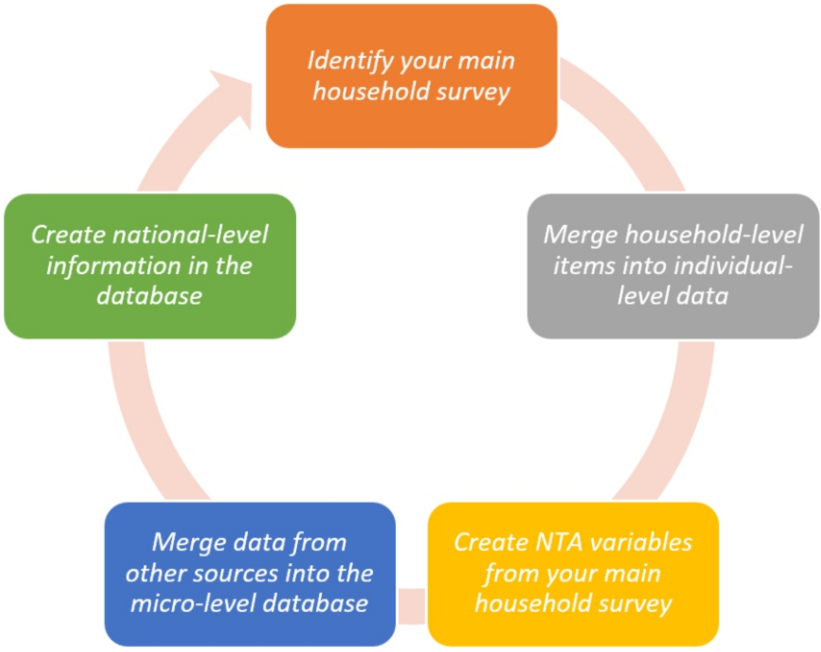
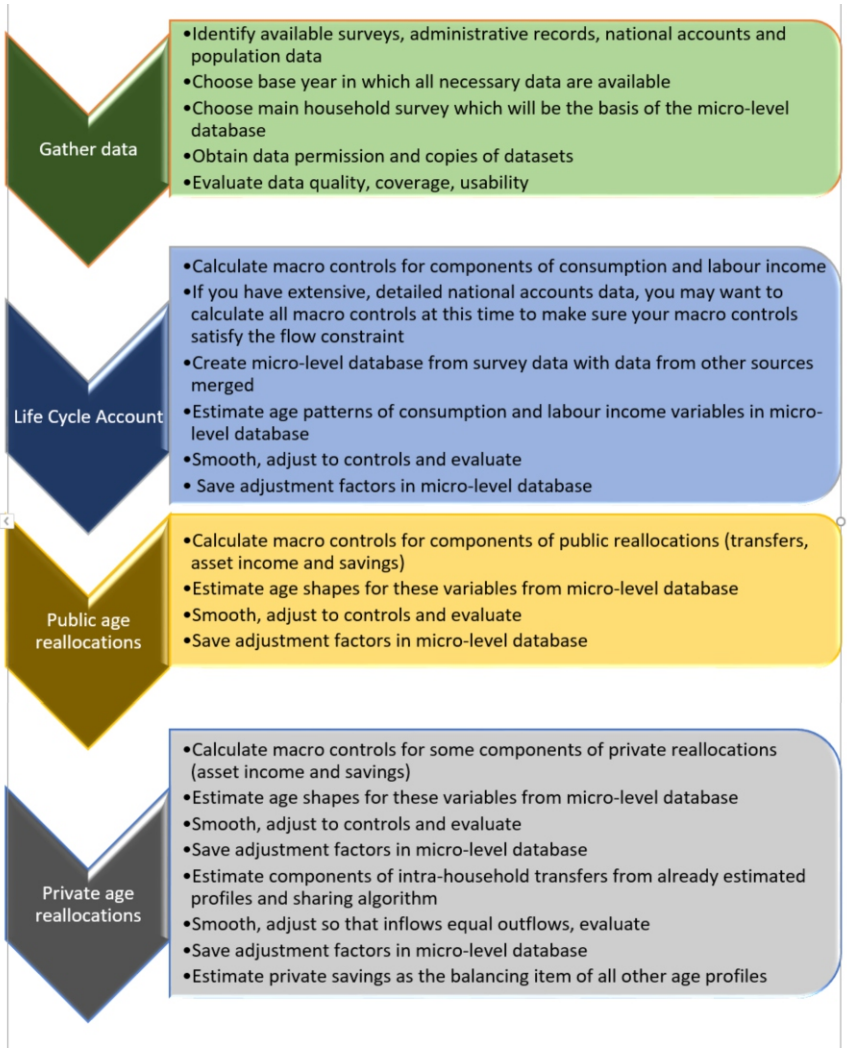


Figure 3: Steps to follow in completing the National Transfer Accounts



Source: United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. Population Division, Department of Economic and Social Affairs, United Nations, New York, USA.

Module 6: Situation Analysis of the Demographic, Socio-economic and Governance Context of the State

- Population and Demography of the State (Population size, distribution and growth including fertility, mortality, and migration in the state)
- Economic Structure, Employment Profiles and Development of the State
- Structure of Access, Quality and Financing of Health and Education in the State
- Governance, Rights and Youth Empowerment in the State

Hands-on: Familiarization with demographic indicators as well as drawing graphs of Population Dynamics

Table 9: Description of Activities in Module 6

Activity	Description
Objectives	• To analyse the structure of access, quality and financing of health and education as inputs into the building of the respective pillars • To discuss the trends and situation of the economic structure, employment profile and development of the State • To examine the contributions of governance, rights and youth empowerment to the prospects of harnessing the demographic dividend in the State
Content	• Population and demography of the State (Population size, distribution and growth including fertility, mortality, and migration in the state) • Economic structure, employment profiles and development of the State • Structure of access, quality and financing of health and education in the State • Governance, rights and youth empowerment in the State • Sector policies and programmes should be explicitly discussed.

Handout/Reading Materials	• Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Harnessing the Demographic Dividend for the Sustainable Development of Nigeria: Demographic Dividend Report of Nigeria. Health Policy Training and Research Programme (HPTRP), University of Ibadan, Nigeria. ***(National DD Report)***
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming and Discussions • Question and Answer session
Session Outline (120 minutes)	• Presentation I: Population and Demography of the State (Population size, distribution and growth including fertility, mortality, and migration in the state) – 20 minutes • Presentation II: Economic Structure, Employment Profiles and Development of the State - 20 minutes • Discussions, Question and Answer session - 20 minutes • Structure of Access, Quality and Financing of Health and Education in the State - 20 minutes • Governance, Rights and Youth Empowerment in the State - 20 minutes • Discussions, Questions and Answer session - 20 minutes
Hands-on Practices and Exercises	• Drawing graphs of demographic indicators and population dynamics

Summary of Knowledge Material for Module 6

The presentation should focus on discussion of the composition of health. This should include private and public health consumption and the different expenditure that constitute each. It should also discuss the variation in health care spending across age groups.

The presentation should focus on discussion of the composition of education. It should essentially include private and public spending on education, as well as the different expenditure that constitute each. It should also discuss the variation in education spending across age groups.

The presentation should analyse and discuss the trend of major economic variables relevant to the building of the economic pillar. Government economic policies and programmes should be well analysed and implications for employment and welfare should be indicated.

Module 7: Analysing the Household (Part 1): Public and Private Consumption

- **Session I:** Education
  - o Obtaining the profiles
  - o Adjusting and Smoothing
- **Session II:** Health
  - o Obtaining the profiles
  - o Adjusting and Smoothing
- **Session III:** Other Consumption Expenditures
  - o Obtaining the profiles
  - o Adjusting and Smoothing

Hands-on: Constructing Per Capita Consumption Expenditure, Adjusting and Smoothing the Estimates using the R Software

Table 10: Description of Activities in Module 7

Activity	Description
Objectives	• To analyse the household as the economic accounting unit of the NTA methodology • To estimate the age profile of consumption, including private and public expenditure • Calculate the per capita age pattern by single year of age from the micro-level database • Adjust age pattern for any missing populations if necessary • Smooth the resulting age shape (except for education) • Adjust the smoothed and non-smoothed profiles to macro controls
Content	• Obtaining the education profiles • Obtaining the health profiles • Obtaining other consumption expenditures profiles • Adjusting and Smoothing
Handout/Reading Materials	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 5 (Page 91-105).

Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions, Question and Answer session
Session Outline (60 minutes)	• The concept and theory of demography and generational economy • The NTA flow identity, Economic life cycle and Intergenerational transfers • Examples using the Nigerian NTA estimates
Hands-on practices and Exercises	• Constructing Per Capita and Aggregate Consumption Expenditure • Adjusting and Smoothing the Estimates using the R Software

Summary of Knowledge Material for Module 7

This section should start with the analysis of the household. The most natural unit of account in the demographic dividend is the individual, though the household is a more natural unit in economic accounting because decisions are mainly taken at the household level, while constraints operate as household members pool resources. On this, it is important to make assumptions about the distribution of resources among household members. Moreover, in order to obtain intra-household distribution, assumptions about the distribution of resources among household members are necessary.

1. It should be assumed that the members of the household share economic resources in an altruistic or egalitarian manner.
   a. Adults within each household have the same level of consumption while children consume less, reflecting their lower material needs.

   b. The sharing rules influence intra-household transfers which are determined in large part by the estimated consumption of individual members.

2. All inter-household transfers are assumed to flow to and from the household head. Thus, the household head holds all of the household's assets, and hence asset income and savings are assigned to him.

   a. Intra-household transfers between household heads and other household members occur because the head is assumed to receive asset income and to save.

The household survey data should be selected and prepared while creating individual-level consumption variables, as well as household survey data.

Steps to follow in calculating an age profile

1. Calculate the macro control
   a) Identify relevant national account items
   b) Adjust national account aggregates to match NTA concepts

2. Calculate the per capita age pattern by single year of age from the micro-level data¬base in one of three ways
   a) From household survey (with survey weights if applicable)
      i. Use individual-level data if available
      ii. Otherwise allocate household amount to individuals in the household (different profiles have different methods for this imputation)
   b) From administrative records
   c) On a priori grounds (i.e., the age shape is assumed or is the product of other, previously calculated age profiles)

3. Adjust age pattern for any missing populations if necessary (i.e., persons not repre¬sented in survey or administrative records)
   a) By assumptions about missing population

b) By bringing in supplementary data about missing population

4. Smooth the resulting age shape (except for education)
   a) Implement smoother over entire age profile or in sections if there are non-random discontinuities
   b) Evaluate smoother to ensure that no real variation has been eliminated

5. Adjust the smoothed and non-smoothed profiles to macro controls. The objective is to reduce sampling variance but not eliminate what may be "real" fea¬tures of the data. Since most age shapes come from survey data, they are associated with a great deal of noise from sampling variation and other sources of error or random variation. Smoothing is thus used to deal with this noise, most profiles are smoothed using a cross-validation smoother. Detailed components should be smoothed, but not the higher-level variables that are made from the components after they are smoothed and adjusted to the macro control.

   a) Calculate the adjustment factor and multiply by age pattern
   b) Evaluate adjustment factor to test the validity of the age shape

Procedure for Estimating Public Education Consumption: Formal and informal

- Estimate unit cost of formal education: Cost per student for each level of schooling, such as primary, secondary, and tertiary.
- Calculate public school enrolment rate for each level and

age: Number enrolled at each school level and age divided by the population at the corresponding age.

- Calculate per capita spending on each level at each age: Product of the unit cost and the public-school enrolment rate.
- Compute per capita spending on education: Sum per capita spending at each level and age across education levels.
- Informal education is allocated equally to each member of the population. Per capita value does not vary by age.

Procedure for Estimating Publicly-funded Health Consumption

- Health care provided directly by government
  - Administrative records on health care costs and utilization by age
  - Proxies such as in-patient and out-patient utilization of services by age, weighted to reflect differences in average costs of in-patient and out-patient services
- Health care purchase by individuals and reimbursed
  - Estimated from household expenditure survey as described below
- **Collective health services**
  - Allocated equally to each person. Per capita value does not vary by age.

Procedure for Estimating Public Consumption Other than Health and Education

- **Public individual consumption**
  - Some programmes are allocated by age if they are important and estimates can be constructed. Example is publicly provided child care.
  - Remaining programs are allocated equally to each person.

- **Public collective consumption**
  - Allocated equally to each person.

Overview of Private Consumption

- All consumption is assigned to individuals, i.e., no public goods or economies of scale.
- Private consumption is distinguished by three purposes:
  - Private education consumption
  - Private health consumption
  - Private consumption other than education and health
- Using household survey and allocation rules
  - Household consumption calculated for each household
  - Household consumption is allocated among household members using allocation rules
  - Household consumption is tabulated to obtain per capita consumption by age

Private Consumption Allocation Rules

- Private Education
  - Education spending by the household is regressed (homogeneous form) on:
    - Number of enrolled members of each age
    - Non-enrolled members of each age
  - Regression coefficients are used as weights to allocate observed spending to each member based on age and enrolment status
  - Results are tabulated to yield per capita consumption by age of member.
- Private Health
  - Profiles are difficult to estimate

– Utilization measures (inpatient and outpatient, for example) can be used in a regression model similar to education
– Last resort: Regression of health care spending on number of members of each age using:
• Iterative method
• Least squares, homogeneous form

• Consumption Other than Education and Health
– More complex methods, e.g., Rothbarth or Engel's method are not robust and are not used.
– Equivalence scale is used
• Ad hoc but based on review of literature
• Same scale used across all countries
• 0.4 for children aged 4 or younger; increases linearly from age 4 to age 20; 1 for those 20 and older.

Module 8: Analysing the Household (Part 2): Labour Income

- **Session I:** Wage and Earnings
- **Session II:** Self-employed Income
    - o Obtaining the profiles
    - o Adjusting and Smoothing

Hands-on: Constructing the Per capita Consumption Expenditure
Adjusting and smoothing the estimates using the R software

Table 11: Description of Activities in Module 8

Activity	Description
Objectives	• To define labour income • To identify and analyse the components of wage earnings and self-employed income • To discuss the variations in labour income across age groups
Content	• Create labour income variables • Estimate per capita values of labour income. This involves taking the average of the micro-level database constructed to indicate the age pattern. • Smoothing the per capita values. It should be noted that: o The per capita education profile should not be smoothed, except for informal education spending. o Since public health spending may increase dramatically when individuals reach an age threshold that affects eligibility requirements, the data should not be smoothed. o Health consumption at age 0 should not be smoothed • Labour income and consumption may both change abruptly at mandatory retirement ages or ages where the incentives for retirement change substantially. This kind of data should also not be smoothed. • Conduct adjustment to macro controls • Evaluate for completeness, consistency and external validity

Handout/Reading Materials	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 5 (Page 91-105).
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions, Question and Answer session
Session Outline (60 Minutes)	• The concept and theory of demography and generational economy • The NTA flow identity, Economic life cycle and Intergenerational transfers • Examples using the Nigerian NTA Estimates
Hands-on Practices and Exercises	• Constructing Per Capita and Aggregate Labour Income • Adjusting and Smoothing the Estimates using the R Software

Summary of Knowledge Material for Module 8

The presentation should define labour income and its components. It should teach the various items that comprise these components as well as how these vary across age groups. It should also teach how these components are identified from survey documents, and what other forms of income are not considered in DD estimations. It should also be stressed that income is usually reported for households rather than individuals. **The process here is the same as the process in Module 6. These are as follows:**

Process of obtaining the final age profiles for consumption and labour income

Steps to follow in calculating an age profile

1. Calculate the macro control
    a) Identify relevant national account items
    b) Adjust national account aggregates to match NTA concepts

2. Calculate the per capita age pattern by single year of age from the micro-level data-base in one of three ways
   a) From household survey (with survey weights if applicable)
      i. Use individual-level data if available
      ii. Otherwise allocate household amount to individuals in the household (different profiles have different methods for this imputation)
   b) From administrative records
   c) On a priori grounds (i.e., the age shape is assumed or is the product of other, previously calculated age profiles)

3. Adjust age pattern for any missing populations if necessary (i.e., persons not repre-sented in survey or administrative records)
   a) By assumptions about missing population
   b) By bringing in supplementary data about missing population

4. Smooth the resulting age shape (except for education)
   a) Implement smoother over entire age profile or in sections if there are non-random discontinuities
   b) Evaluate smoother to ensure that no real variation has been eliminated

5. Adjust the smoothed and non-smoothed profiles to macro controls
   a) Calculate the adjustment factor and multiply by age pattern
   b) Evaluate adjustment factor to test the validity of the age shape

Procedure for estimating the age Profile of labour Income

- Separate age profiles estimated for two components
  - Compensation of employees
  - Return to labour from mixed income

- Age profile of compensation
  - Survey reports separately by individual
  - Include all employer-provided benefits, including social contributions by employer
  - Social contributions by employer may be captured in adjustment to macro control but only if they are proportional
  - Tabulate by age

- Age profile of mixed income
  - Allocated to household members who report themselves as self-employed or as unpaid family workers
  - Allocation weights are based on mean compensation or earnings of employees

Smoothing and Upper Age Interval

- Smoothing guidelines
  - Only smooth lowest level variables, not aggregations
  - Avoid smoothing real variation that arises for a number of reasons
  - Set upper age interval when variance at upper ages becomes too great
  - Be mindful of cross-variable effects

- Recommendation of software and method details provided in the manual appendix

Module 9: The Macroeconomy and Aggregate Control for the Variables

- Relationship between NTA and SNA
- Calculating macro-control for each of the variables

Hands-on: Obtaining the profile for Lifecycle Deficit

Table 12: Description of Activities in Module 9

Activity	Description
Objectives	• To understand the fundamental concepts of the National Transfer Accounts • To identify the key steps to follow in estimating the National Transfer Accounts • Understand the NTA profile for Nigeria compared to other countries of the world • Highlight the importance of NTA for demographic dividend analysis
Content	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 4 (Page 71-90).
Handout/Reading Materials	• Global NTA Manual • NTA newsletter • NTA Book
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions, Question and Answer session
Session Outline (60 minutes)	• The concept and theory of demography and generational economy • The NTA flow identity, Economic life cycle and Intergenerational transfers • Examples using the Nigerian NTA Estimates
Hands-on Practices and Exercises	Obtaining the Lifecycle Deficit Profile

Summary of Knowledge Material for Module 9

Macro controls are also called "control totals". They are aggregate measures of economic flows, as measured in the System of National Accounts (SNA). They are used to scale NTA age profiles to ensure that the NTA aggregate estimates match the estimates from the SNA. Thus, locating all available national account data is the first step in calculating NTA macro controls.

The NTA flow account draws mainly on current accounts in the SNA. Four current accounts in the SNA provide basic information about current resources and uses:

i. The generation of income account
ii. The allocation of primary income account
iii. The secondary distribution of income account
iv. The use of disposable income account.

The allocation of primary income account provides the required data to estimate three components of NTA, which are labour income, asset income, and property income. The secondary distribution of income account provides information useful for estimating NTA transfers. And the use of disposable income account provides data needed to calculate consumption and savings in NTA.

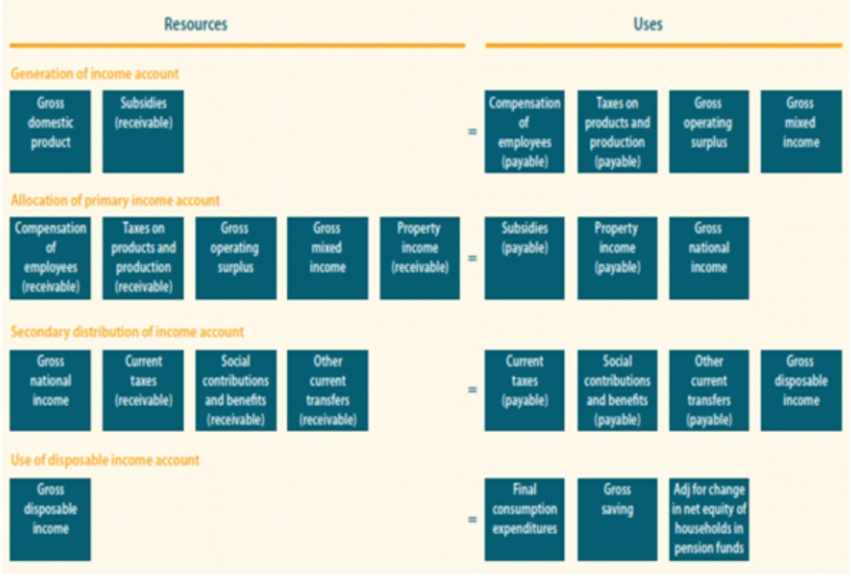
Calculating macro controls involve the following processes:

i. Calculating primary income
ii. Calculating consumption and savings
iii. Calculating transfers

Adjusting to Aggregate Controls

- In all cases where aggregate controls are available, age profiles are scaled (proportionately adjusted) to match aggregate values.
- For life cycle accounts, aggregate controls are, in principle, available for all components.

Figure 4: Schematic of flow accounts in the System of National Accounts



Aggregate Controls: Consumption

This should be based on final consumption expenditure from SNA

- Public is consumption of general government
- Private is consumption of households and NPISHs (non-profit institutions serving households)

Aggregate Controls: Labour income

- Labour income includes:
  - Wages and salaries payable in cash or in kind
  - Social contributions payable by employer
  - Imputed value of accrued pensions
  - Share of mixed income that is return to labour
  - Taxes on products and production attributed to labour
- Labour income excludes:

– Value of childrearing and other in-home activities which do not produce market goods and services

Module 10: Economic Life Cycle Account

- Estimating the Age Profiles
- Finalizing the Age Profiles
- Comparing, summarizing and applying both the aggregate and per capita account profiles

Hands-on: Obtaining the Economic Life Cycle Account

Table 13: Description of Activities in Module 10

Activity	Description
Objectives	• To understand the methods for constructing the life cycle account • To construct the economic life cycle equation and obtain the life cycle deficit. This includes utilizing the consumption at each age and labour income at each age to provide a profile of the life cycle deficit which is the difference between the two
Content	• Estimating the age profiles • Finalizing the age profiles • Comparing, summarising and applying both the aggregate and per capita account profiles
Handout/Reading Materials	• United Nations (2013). National Transfer Accounts Manual: Measuring and Analysing the Generational Economy. United Nations, New York. Chapter 5 (Page 91-105).
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions, Question and Answer session
Session Outline (60 minutes)	• Presentation I: National Transfer Accounts: • Hands-on on the construction of the age profile of the consumption at each age and labour income at each age to provide a profile of the life cycle deficit which is the difference between the two
Hands-on Practices and Exercises	Obtaining the Aggregate and Per Capita Economic Life Cycle Account

Summary of Knowledge Material for Module 10

Economic life cycle can be used in many important ways to understand the macro economic implications of population age structure. The estimation of the reallocation system provides important information about the generational economy. This is typified in the NTA methodology as the economic life cycle. Economic life cycle highlights three things:

- Individuals at each age use resources to meet their material needs (consumption)
- Individuals acquire economic resources through their labour (labour income)
- Life cycle deficit, i.e. the gap that must be funded through transfers and asset-based flows

Constructing National Transfer Accounts (NTA) variables comprises the economic life cycle account, which includes consumption, labour income and the life cycle deficit/surplus. Public and private consumption should be distinguished, along with their components (spending on education, health, and others). Labour income should be analysed along its components comprising employees' earnings (including benefits) and the labour income of self-employed persons (including unpaid family workers).

Steps for Constructing the Per Capita and Aggregate Components Economic Life Cycle Accounts

The following identities hold for aggregate life cycle flows:

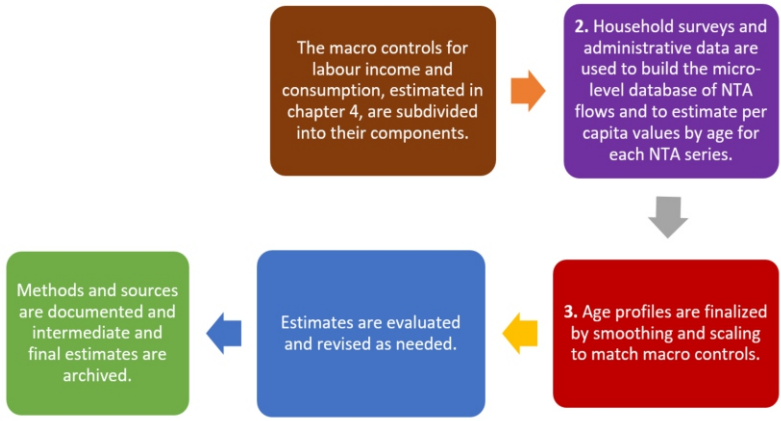
Life cycle deficit = Consumption – Labour income

Consumption = Public consumption + Private consumption

Labour income = Earnings + Self-employment labour income.

- The macro controls for labour income and consumption are subdivided into their components.
- Household surveys and administrative data are used to build the micro-level data-base of NTA flows and to estimate per capita values by age for each NTA series.
- Age profiles are finalized by smoothing as appropriate and scaling to match macro controls.
- Estimates are evaluated and revised as needed.
- Methods and sources are documented and intermediate and final estimates are archived.
- The economic life cycle account obtained should be compared, summarized and applied in the final Demographic Dividend estimation.

Figure 5: Steps for Constructing the Economic Life Cycle Accounts



Procedure for Evaluating the NTA Estimates

- Check list provided
  - Completeness
  - Consistency
  - External validity
- Note that many of these checks will be automated using a spreadsheet that can be downloaded.

Documenting and Archiving

- Good documentation is essential
  - All data sources fully referenced
  - Include data accessed and version number for any data that is downloaded
  - Can analysis be replicated?
- Archiving
  - Proper storage and backup are essential

- NTA database available to members of NTA network

Module 11: Economic Support Ratio and the Demographic Dividend

- Demographic Transition
- Dependency Ratio
- Support Ratio
- First and Second Demographic Dividends

Hands-on: Obtaining the Economic Support Ratio and the Demographic Dividend

Table 14: Description of Activities in Module 11

Activity	Description
Objectives	• To highlight the procedure for estimating the economic support ratio and the first demographic dividend • To clarify the difference between demographic transition, dependency ratio, and the support ratio • To provide a projection of effective producers, effective consumers and the demographic dividend for at least 100 years
Content	• Dependency Ratio • Demographic Support Ratio • Economic Support Ratio • First and Second Demographic Dividends
Handout/Reading Materials	• Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Harnessing the Demographic Dividend for the Sustainable Development of Nigeria: Demographic Dividend Report of Nigeria. Health Policy Training and Research Programme (HPTRP), University of Ibadan, Nigeria. • Mason A. and Kinugasa T. (2008). East Asian Economic Development: Two Demographic Dividends. Journal of Asian Economics 19: 389–399 • Mason A. (2007). Population Change, Labour Markets, and Sustainable Growth, Volume 281. Emerald Group Publishing Limited. DOI 10.1016/S0573-8555(07)81004-2

Format of Activities for Delivering the Module	• PowerPoint presentations • Construction of graphs for the projected figures for effective producers, effective consumers and demographic dividend • Brainstorming, Discussions, Question and Answer session
Session Outline (60 minutes)	• PowerPoint Presentation: **Economic Support Ratio and the Demographic Dividend** • Hands-on for computation of support ratios and demographic dividend • Examples using the Nigerian NTA estimates
Hands-on Practices and Exercises	• Estimating the Economic Support Ratio • Estimating the Demographic Dividend

Summary of Knowledge Material for Module 11

The support ratio is the ratio of the effective number of producers to the effective number of consumers. The effective number of producers is a measure calculated to incorporate age variation in labour force participation, hours worked, unemployment and productivity by using the estimated labour income profile. Individuals aged 30-49 are counted, on average, as one effective worker. Those at each single-year-of-age are counted as one, less than one, or more than one effective worker depending on the average labour income at that age relative to the average labour income of persons 30-49. A similar approach is used to calculate the effective number of consumers using per capita consumption profile to construct a consumer equivalence scale. A feature of Nigeria's support ratio is that the take-off is very slow. Part of the slow take-off is a consequence of the relatively slow speed of fertility decline, hence the gradual changes in population age structure.

Module 12: Preparation of the Demographic Dividend Report

- Group delineation for the purpose of report writing
- Brainstorming on the outline of the report
- Sharing of roles on the report preparation

Table 15: Description of Activities in Module 12

Activity	Description
Objectives	• To decide on the appropriate table of content for the demographic dividend report • To go into different groups for the purpose of brainstorming the contents of different chapters • To teach the participants to write the DD reports • To brief the participants on the contents of the reports from their respective pillars • To prepare the draft report of the demographic dividend profile
Content	• Group delineation for the purpose of report writing • Brainstorming on the outline of the report • Sharing of roles on the report preparation
Handout/Reading Materials	• Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Harnessing the Demographic Dividend for the Sustainable Development of Nigeria: Demographic Dividend Report of Nigeria. Health Policy Training and Research Programme (HPTRP), University of Ibadan, Nigeria. • Mason A. and Kinugasa T. (2008). East Asian Economic Development: Two Demographic Dividends. Journal of Asian Economics 19: 389–399 • Mason A. (2007). Population Change, Labour Markets, and Sustainable Growth, Volume 281. Emerald Group Publishing Limited. DOI 10.1016/S0573-8555(07)81004-2
Format of Activities for Delivering the Module	• Divide participants into groups that will handle each thematic pillar of the Roadmap for harnessing the demographic dividend. • Brainstorming and Discussions • Groups report back and discuss their findings in plenary
Session Outline (120 minutes)	• Participants work in groups to prepare report on the chapters allocated to each group

Summary of Knowledge Material for Module 12

After estimating the first demographic dividend for the country/region/state, the estimates should be presented and comments harvested. Essentially, all participants are expected to examine the estimates closely and discuss the issues arising from the presentation.

Facilitators should create as many groups as the number of investment pillars identified in the Roadmap. All participants must belong to a group, based on their strength or the sector in which they are formally employed. At least one facilitator should be assigned to each group to guide the analysis, estimation and discussions in the group. They are also expected to provide technical support to the groups as required. The terms of reference should be discussed thoroughly and led by the team lead (leader of the technical team/facilitators), with effective feedback from participants.

Each group moves into a separate room or space within the conference hall. Each group is to appoint a member as the secretary of the group to take down notes, and another member as the leader. The group leader is expected to provide leadership and moderate discussions in the group. Responsibilities should be shared within each group; the various parts of the report can be shared and developed by all individuals in the group after due consultations and discussions among the group members. Participants should endeavour to obtain all required information from the various sources available. Calls, emails, chats and other contact means can be deployed to obtain data and information from the relevant ministries. The first phase of writing should essentially focus on data and information gathering. The writing assignment is not limited to the conference room, as participants are expected to keep writing

even in their various rooms after the close of deliberations for the day. The assigned facilitator should give technical support and advise the group where necessary, and ensure the right data and information (well referenced) are obtained.

This is partly hands-on. All facilitators are to monitor each participant very closely, swiftly addressing their challenges as they attempt to estimate labour and consumption profiles, and the life cycle deficit. The lead instructor should also demonstrate clearly the contents and expectations of the reports for each investment pillar (each group). Facilitators assigned to each group must monitor closely the writings and provide guidance on the required data and information, as well as their sources.

Module 13: Presentation and Harmonization of Group Reports

- Group preparation of the State Transfer Accounts and Demographic Dividend Reports according to agreed Chapters
- Presentation of the Revised Group Reports
- Harmonization of the Group Reports

Table 16: Description of Activities in Module 13

Activity	Description
Objectives	• To prepare the State Transfer Account with components containing – Economic life cycle account – Profile of Effective producers – Profile of Effective Consumers – Projections of First demographic dividend over a period of at least 100 years • To present the writing of the groups for comments and fresh ideas. • To obtain comments and contributions from other participants on key aspects of the reports.
Content	• Group preparation of the various chapters of the State Transfer Accounts and Demographic Dividend Reports according to agreed Chapters • Presentation of the Revised Group Reports • Harmonization of the Group Reports
Handout/Reading Materials	• Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Harnessing the Demographic Dividend for the Sustainable Development of Nigeria: Demographic Dividend Report of Nigeria. Health Policy Training and Research Programme (HPTRP), University of Ibadan, Nigeria. • Mason A. and Kinugasa T. (2008). East Asian Economic Development: Two Demographic Dividends. Journal of Asian Economics 19: 389–399 • Mason A. (2007). Population Change, Labour Markets, and Sustainable Growth, Volume 281. Emerald Group Publishing Limited. DOI 10.1016/S0573-8555(07)81004-2
Format of Activities for Delivering the Module	• PowerPoint presentations • Brainstorming, Discussions
Session Outline (180 minutes)	• Participants work in groups to deliver report on the Chapters allocated to each group • Group prepare the report and the PowerPoint presentations • Groups report back and discuss their findings in plenary

Summary of Knowledge Material for Module 13

The group leader or any member appointed by each group should present the report for the group or respective pillar. The various write-ups by each individual in the group should be properly merged into one document by the group leader before presentation. All participants are welcome to make comments, while questions should be raised where necessary for clarity of information provided in the report. All facilitators must pay complete attention to the presentations and provide appropriate guidance on salient issues, omitted information, sources of information and relevance of information provided. Facilitators must give a thorough review and examination of each report presentation. Reports must be presented one after the other.

The reports are to be revised following comments and suggestions received from facilitators/technical team and other participants during presentations. Further contacts should be made to obtain other required information. The revision can also be split into sections to be handled by each member. The sections should be harmonized for presentation.

Each group should conduct the final round of assessment of their reports for the purpose of harmonization. The facilitator assigned to each group should review the reports with the group and ensure all sections are well written. All the groups should come together to put the reports together as one document.

Module 14: Preparation of the Demographic Dividend Policy Brief

- Presentation: How to write a policy brief
- Harmonizing the outlines of the Policy Briefs and the Reports
- Writing the Policy Briefs
- Presentation of the Policy Briefs

Table 17: Description of Activities in Module 14

Activity	Description
Objectives	• To prepare at least two Policy Briefs on the implications of the Demographic Dividend Estimation and Results
Content	• The concept and theory of demography and generational economy • The NTA Flow Identity, Economic life cycle and Intergenerational transfers
Handout/Reading Materials	• Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Unmet Need for Family Planning and Demographic Dividend in Nigeria. Demographic Dividend Policy Brief, 2018 No 1 • Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Will Out of School Children Act as Bane to Harnessing Demographic Dividend In Nigeria? Demographic Dividend Policy Brief, 2018 No 2 • Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). Youth Unemployment and Demographic Dividend. Demographic Dividend Policy Brief, 2018 No 3 • Olanrewaju O., Soyibo A., Lawanson A. O., Olasehinde N., Odumosu M., Orekoya A., Owoeye O. and Adeyemi F. (2018). The Roles of Legislature in Harnessing Demographic Dividend in Nigeria. Demographic Dividend Policy Brief, 2018 No 4
Format of Activities for Delivering the Module	• To divide all participants into functional groups and assign tasks to them • To spell out the TOR for each group • Prepare a Summary document or handout based on key messages from the Demographic Dividend results. • Prepare policy briefs with the objective(s) of the Training workshop for different thematic pillars on the Roadmap for harnessing the demographic dividend

Session Outline (60 minutes)	• Presentation: How to write a policy brief • Participants work in groups to deliver policy briefs • Groups prepare the reports and the PowerPoint presentations • Groups report back and discuss their findings in plenary

Summary of Knowledge Material for Module 14

Each group is expected to briefly meet to agree on two or three topics for the policy briefs for their respective pillars. They should also agree on the outlines of the policy briefs. The groups subsequently return to the stage/conference room to present their topics and outlines for discussion, comments and suggestions for the purpose of harmonization. The outlines are corrected with comments from participants and facilitators, then participants proceed to write the policy briefs in their rooms for presentation during the next round of activities. The outline of the full draft Demographic Dividend Report is also harmonized.

The participants further brainstorm within their respective groups to discuss and address issues arising from the policy brief writing. They then conclude and harmonize the policy briefs for presentation. The group leader or any member appointed by each group will present the policy brief for the group or respective pillar. The groups are expected to harmonize their briefs for coherence and conciseness. Comments are welcome from all participants, while questions should be raised where necessary for clarity of information provided in the revised report. All facilitators must be attentive during the presentations and provide appropriate guidance on salient issues, omitted information, sources of information and relevance of information provided.

Since the Demographic Dividend report is expected to build on the roadmap, the two reports much align. The connections must be demonstrated and presented to all participants for further deliberations and comments. The selected investment pillars must align with those identified in the roadmap while policy options must reflect the demographic and welfare issues identified. The structure of the DD report must also be in line with the roadmap.
The reports are revised following comments and suggestions received from facilitators/technical team and other participants during presentations. Further contacts should be made to obtain other required information. The revision can also be split into sections to be handled by individual members. The reports on each section should be harmonized for presentation.

The group leader or a member appointed by each group will present the revised report for the group or respective pillar. The various write-ups by each individual in the group should be properly merged into a single document by the group leader before presentation. Participants are welcome to make comments and ask questions where necessary for clarity of information provided in the revised report. All facilitators must pay focussed attention to the presentations and provide appropriate guidance on salient issues, omitted information, sources of information and relevance of the information provided. This is important for the development of the first draft of the harmonized report. All reports must be presented one after the other.

Wrap-up, Next Steps and Departure

Each facilitator should discuss his/her observations over the course of the workshop, and draw general implications for subsequent workshops. A critical review of the workshop should be conducted

while a few words of appreciation should be said to all participants and facilitators. This can be done by the lead facilitator or representative of the State Government. Addresses should be welcome from sponsors and special guests before the official closing of the workshop. The workshop should then be brought to a close with prayers, which can be said by reciting the National Anthem or individual prayers. All logistic items should be arranged for movement. Further informal networking activities are encouraged. At least one of the participants should wait for everyone to leave to ensure that no item is left behind at the venue.

All facilitators are advised to depart at the same time to ensure safety. Means of transport should be arranged before the end of the workshop.

SECTION C

POST-WORKSHOP STAGE

To review and upgrade the draft DD Report, as well as validate the appropriateness of the recommendations to the context of the country or state.

Report Writing by Technical Team

After the workshop, the technical team should schedule a 3-day report writing meeting to critically review the DD reports and make necessary revisions. Every aspect of the report must be thoroughly examined. The chapters may be distributed among the technical team for thorough revision. The revised chapters will then be harmonized and a final report produced, with updated references, data and data sources. As part of the report writing, an editor will be expected to review the report for grammatical errors.

Submission of Draft Report

The second step in the post workshop stage is submission of the Draft Report of the DD estimation exercise to the Ministry of Budget and Planning or its equivalent.

Report Validation

Upon receipt of the DD report from the consultants, the MDAs are expected to review and validate the report. This validation involves ensuring that the recommendations made address the current challenges, and are achievable and measurable in the context of the country/state.

Submission and Publication of the Revised Report

This is the final stage wherein comments on the validated reports are made available to the technical team. Upon receipt, the technical team address the issues raised and revise the report accordingly. The final report is submitted to the relevant MDA. The report is copy-edited for grammatical errors and will be finally

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APPENDICES

- Draft Workshop Agenda
- Personal Information Sheet
- Evaluation Form
- Draft Workshop on Estimation of DD Attendance List

DRAFT WORKSHOP AGENDA

State Logo

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HEALTH POLICY TRAINING AND RESEARCH PROGRAMME (HPTRP)
Department of Economics, Universitv of Ibadan. Ibadan

UNITED NATIONS POPULATION FUND
Nigeria

Building Evidence and Capacity for Demographic Dividend in xxxx State

TWELVE-DAY STATE TEAM TRAINING WORKSHOP
Date: XXXXXX
Venue: XXXXXX

AGENDA

ARRIVAL OF PARTICIPANTS: XXXXXX		
TIME	EVENT	RESPONSIBILITY
	DAY 1: XXXXXX Moderator: XXXXXX	
09.00 – 09.30	Registration of Participants	HPTRP
09.30 – 10.30	**Opening Ceremony** • Welcome Remarks • Opening Remarks I • Opening Remarks II • Introduction and Expectations of Participants • Objectives and Expectations of the Workshop	All participants and Facilitators
10.30 – 11.00	**TEA BREAK**	
11.00 – 11.30	**MODULE 1** Concept and Importance of the Demographic Dividend	XXXXXX
	Video Presentation on the Concept of Demographic Dividend	
11.30 – 12.30	The African Union and Nigerian Roadmaps for Harnessing the Demographic Dividend for Youth Development	XXXXXX
12.30 – 13.00	A Comparative Analysis of Demographic Dividend Estimates Across the World and Africa and Implications for Nigeria	XXXXXX
13.00 – 13.40	Methodological Approaches for Estimating the Demographic Dividend Across the World	XXXXXX
13.40-14.00	Video Documentary on the Demographic Dividend in Nigeria	XXXXXX
14.00 – 15.00	**LUNCH**	
	MODULE 2	
15:00 – 16:00	The Concept and Theory of Demography and Generational Economy	XXXXXX
16.00 – 17.00	The NTA Flow Identity, Economic Life Cycle and Intergenerational Transfers	All Facilitators

17.00-17.30	• Examples using the Nigerian NTA Estimates
	• Extensions of the NTA Methodology
	  ○ Demographic Dividend Projections
	  ○ Wealth and Bequests
	  ○ National Time Transfer Accounts
		XXXXXX

	Day 1 Closes	

TIME	EVENT	RESPONSIBILITY
	DAY 2: XXXXXX Moderator: XXXXXX	
08.30 – 09.00	Recap of Day 1 Activities	Rapporteurs
	MODULE 3	
09.00-10.30	Basic Fundamentals of Excel Worksheet for calculations and constructing figures	XXXXXX
10.30 – 11.00	TEA BREAK	
11.00-14.00	Basic Statistical Operations using Stata	XXXXXX
14.00 – 15.00	LUNCH	
15.00-16.30	Basic Statistical Operations using R software	XXXXXX
16.30-17.30	**Hands-on:** *Basic Fundamentals of using Excel, STATA and R Software*	XXXXXX
	Day 2 Closes	
	DAY 3: XXXXXX Moderator: XXXXXX	
08.30 – 09.00	Recap of Day 2 Activities	Rapporteurs
	MODULE 4	
09.00-10.00	• Materials	XXXXXX
10.00 – 10.30	TEA BREAK	
10.30-11.00	Basic methods for estimation Steps to follow in completing the accounts	XXXXXX
11.00-11.30	**Hands-on:** *Familiarization with demographic indicators as well as drawing graphs of population dynamic*	XXXXXX
	MODULE 5	
11.30 – 12.30	Situation Analysis of Health Pillar in the State	Representative of Ministry of Health
12.30 – 13.30	Situation Analysis of Education Pillar in the State	Representative of Ministry of Education
13.30 – 14.30	LUNCH	
14.30 – 15.30	Situation Analysis of Economic Pillar in the State	Representative of Budget and Planning Ministry
15.30 – 16.30	Situation Analysis of Governance, Security and Justice Pillars in State	Representatives of Ministry of Justice and Youth
16.30 – 17.30	**Hands-on:** *Using the Batch file mode (do-file) in STATA software*	XXXXXX
	Day 3 Closes	

DAY 4: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 3 Activities	
	MODULE 6	
09.00-10.00	Analysing the Household: Consumption 1: Education	XXXXXX
10.00 – 11.00	Consumption 2: Health	XXXXXX
11.00 – 11.30	TEA BREAK	
11.30 – 12.30	Other Consumption Expenditure	
12:30 – 13:30	**Hands-on:** *Constructing Per capita Consumption Expenditure* *Adjusting and smoothing the estimates using the R software*	XXXXXX
13.30 – 14.30	LUNCH	
	MODULE 7	
14.30-15.30	Labour Income: Wage earning and self-employed income	XXXXXX
15.30-16.30	o Obtaining the profiles o Adjusting and Smoothing	XXXXXX
16.30-17.30	**Hands-on:** *Constructing the Per capita Consumption Expenditure* *Adjusting and smoothing the estimates using the R software*	
Day 4 Closes		

TIME	EVENT	RESPONSIBILITY
DAY 5: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 4 Activities	Rapporteurs
	MODULE 8	
09.00 – 10.30	Macroeconomy and Aggregate Controls	XXXXXX
10.30 – 11.00	TEA BREAK	
11.00 – 13.00	**MODULE 9** Economic Life Cycle Account	XXXXXX
13.00 – 14.00	LUNCH	
14.00 – 17.00	**Hands-on:** *Obtaining the Profile for Life Cycle Deficit*	All Facilitators
Day 5 Closes		
DAY 6: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 5 Activities	Rapporteurs
09.00 – 10.30	**MODULE 10** Economic Support Ratio and the Demographic Dividends	XXXXXX
10.30 – 11.00	TEA BREAK	
11.00 – 12.30	Economic Support Ratio and the Demographic Dividends *(Cont'd)*	XXXXXX
12.30 – 15.00	JUMAT / LUNCH	
15.00 – 17.00	**Hands-on:** *Estimation of Demographic Dividend I*	All Facilitators
Day 6 Closes		

DAY 7: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 6 Activities	Rapporteurs
09.00 – 10.30	**MODULE 11** Preparation of the Demographic Dividend Report by all the groups	**XXXXXX**
10.30 – 11.00	**TEA BREAK**	
11.00 – 12.30	Preparation of the Demographic Dividend Report by all the groups (cont'd)	**XXXXXX**
12.30 – 14.00	**LUNCH**	
14.00 – 17.00	Preparation of the Demographic Dividend Report by all the groups (cont'd)	All participants
Day 7 Closes		

TIME	EVENT	RESPONSIBILITY
DAY 8: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 7 Activities	Rapporteurs
09.00 – 10.30	Presentation of the Group Reports	Group Leaders
10.30 – 11.00	**TEA BREAK**	
11.00 – 12.30	Presentation of the Group Reports (cont'd)	Group Leaders
12.30 – 14.00	**LUNCH**	
14.00 – 17.00	Revision of the Group Reports	All participants
Day 8 Closes		

DAY 9: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 8 Activities	Rapporteurs
09.00 – 10.30	Presentation of the Revised Group Reports	Group Leaders
10.30 – 11.00	**TEA BREAK**	
11.00 – 12.30	Presentation of the Revised Group Reports (cont'd)	Group Leaders
12.30 – 14.00	**LUNCH**	
14.00 – 17.00	Harmonization of the Revised Group Reports	All participants
Day 9 Closes		
DAY 10: XXXXXX Moderator: XXXXXX		
08.30 – 09.00	Recap of Day 9 Activities	Rapporteurs
09.00 – 10.30	**MODULE 12** Presentation and Harmonization of Group Reports	**XXXXXX**
10.30 – 11.00	**TEA BREAK**	
11.00 – 12.30	**MODULE 13** How to write a Policy Brief	**XXXXXX**
12.30 – 14.00	**LUNCH**	
14.00 – 17.00	Harmonizing the Outlines of the Policy Briefs and the Reports	**XXXXXX**
Day 10 Closes		

TIME	EVENT	RESPONSIBILITY
	DAY 11: XXXXXX Moderator: XXXXXX	
08.30 – 09.00	Recap of Day 10 Activities	Rapporteurs
09.0 – 10.30	Policy Briefs Writing	All participants
10.30 – 11.00	**TEA BREAK**	
11.0 – 12.30	Presentation of the Policy Briefs	All participants
12.30 – 14.00	**LUNCH**	
14.00 – 17.00	Presentation of the Policy Briefs (cont'd)	All participants
	Day 11 Closes	
	DAY 12: XXXXXX Moderator: XXXXXX	
09.30 – 10.00	Recap of Day 11 Activities	Rapporteurs
10.00 – 12.00	Alignment of the Report with the DD Roadmap for the Post-Estimation Process	**XXXXXX**
10.30 – 11.00	**TEA BREAK**	
12.00 – 15.00	**JUMAT / LUNCH**	
14.00 – 17.00	**Final Presentations** Discussion of Group Results, Wrap-up and Next Steps	All participants **XXXXXX** **XXXXXX**
	Day 12 Closes	
	DAY 13: XXXXXX	
	Closing and Departure	

HEALTH POLICY TRAINING AND RESEARCH PROGRAMME (HPTRP)
Department of Economics, University of Ibadan, Nigeria

UNITED NATIONS POPULATION FUND
Nigeria

Building Evidence and Capacity for Demographic Dividend in Nigeria

TEAM TRAINING WORKSHOP ON ESTIMATRION OF DD IN XXXXXXX

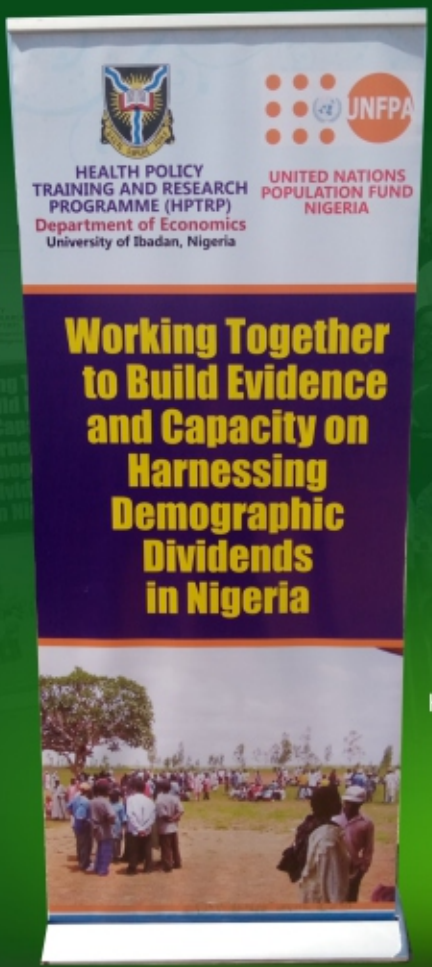
Date: XXXXXX **Venue: XXXXX**

PERSONAL INFORMATION SHEET

Dear participant,

Kindly provide the following information about yourself:

S/N	Name	MDA	Designation	Mobile	Email
1					
2					
3					
4					
5					



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