PRESENTATION ON MY "MSC TRANSPORT PLANNING AND ENGINEERING" AND ITS RELEVANCY WITH LGED

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UPAZILA ENGINEER

UKHIYA, COX'S BAZAR

ACKNOWLEDGEMENT

- The Government of Bangladesh
- Local Government Engineering Department
- The Chief Engineer, LGED
- Human Resource Development Project and Training Unit
- All of My Seniors, Colleagues and Obviously my Family.

UNIVERSITY OF LEEDS

- Situated in the Leeds which is the largest city of West Yorkshire in the United Kingdom.
- 92th as per QS ranking and 127th as per Times Higher Education Ranking

ITS (INSTITUTE FOR TRANSPORT STUDIES), UNIVERSITY OF LEEDS

- The University of Leeds has achieved an excellent position in global rankings for Transportation Science & Technology.
- It is 4th in the world, according to Shanghai Ranking's Global Ranking of Academic Subjects 2017.

COURSE CONTENT

- Shaping Future Transport System
- Principles of Transport Modelling
- Transport Data Collection and Analysis
- Principles of Transport Engineering
- System Dynamics: Modelling Policy
- Road Geometry and Infrastructure
- Traffic Network Modelling
- Transport Integrated Project
- Dissertation

SHAPING FUTURE TRANSPORT

Transport measures and measure selection

- Aims of measure selection;
- Strategies and measure types;
- Politics, and public influence;
- Legal influences;
- Understanding how measures work in different locations – general and specific evidence

SHAPING FUTURE TRANSPORT

Measure types – ways of categorising measures

Supply- and demand-side:

- Supply side measures:
- creating infrastructure capacity
- creating 'attractive' towns and cities
- creating more road space to reduce congestion

- Demand side measures:
- intended to alter demand, for instance by cost dis/incentive (e.g. congestion charge; fare increase), or by publicity, or by changing travel needs.

PRINCIPLES OF TRANSPORT MODELLING

- To understand the role and purpose of transport models
- To understand the advantages and disadvantages of each of a range of modelling techniques
- To be able to select an appropriate model for a given task
- To be able to use a modelling package to analyse real-world problems
- To understand the practical importance and theoretical consistency in transport modelling

IMPORTANCE OF TRANSPORT MODELLING

– an important part of decision-making processes in transport

– allows users to explore and estimate the consequences of particular policies, strategies or schemes on a desktop rather than in a real network

– Plays an important role in understanding & interpreting the real world

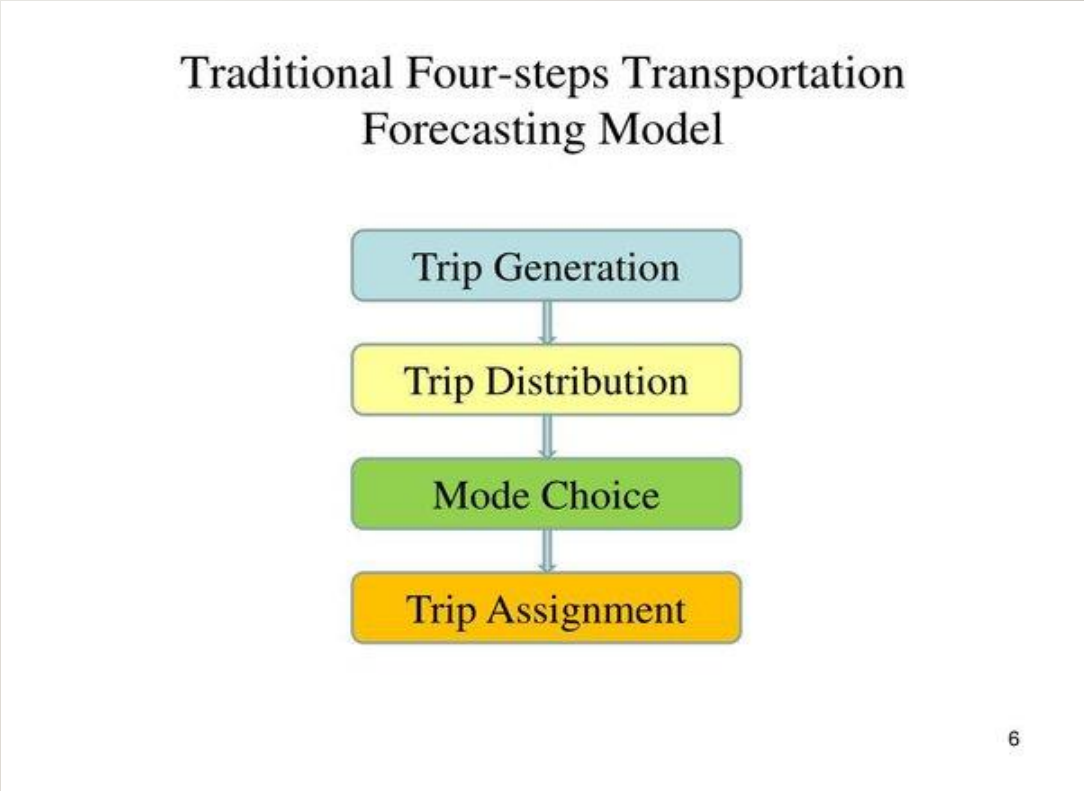
FOUR-STAGE TRANSPORT MODELS

1. Trip Generation How may trips: (a) originate from the zone; and (b) end in the zone?

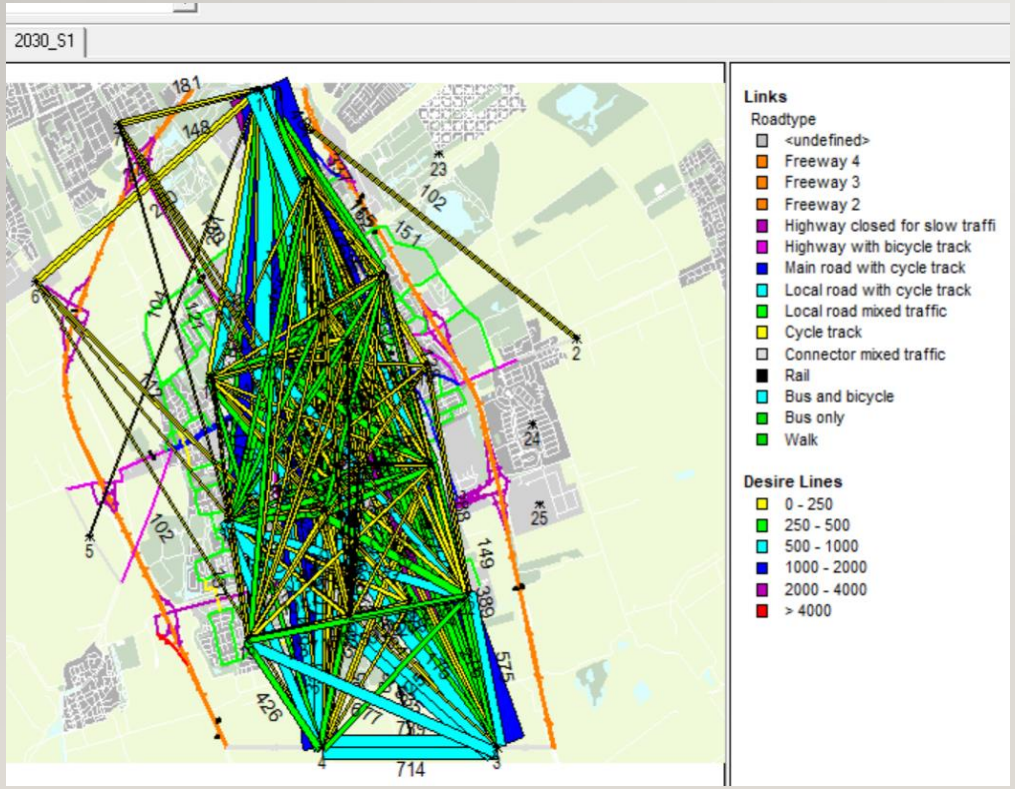
2. Trip Distribution where the generated trips go and the attracted trips come from?

3. Mode Split Using what mode?

4. Traffic Assignment Using what route?



TRANSPORT MODELLING



TRANSPORT DATA COLLECTION AND ANALYSIS

Objectives

- Different types and approaches for data collections
- Analysis of collected data using different methods of Statistics.

PRINCIPLES OF TRANSPORT ENGINEERING

Objectives

- familiarize with the engineering aspects of the design of transport infrastructure
- understanding of the principles of engineering design
- familiarity with the engineering design requirements associated with road construction and with public transport infrastructure.
- appreciation of the environmental impacts of transport systems

ROAD GEOMETRY AND INFRASTRUCTURE

- Learnings

  -Roundabouts

  - Signalized Junction

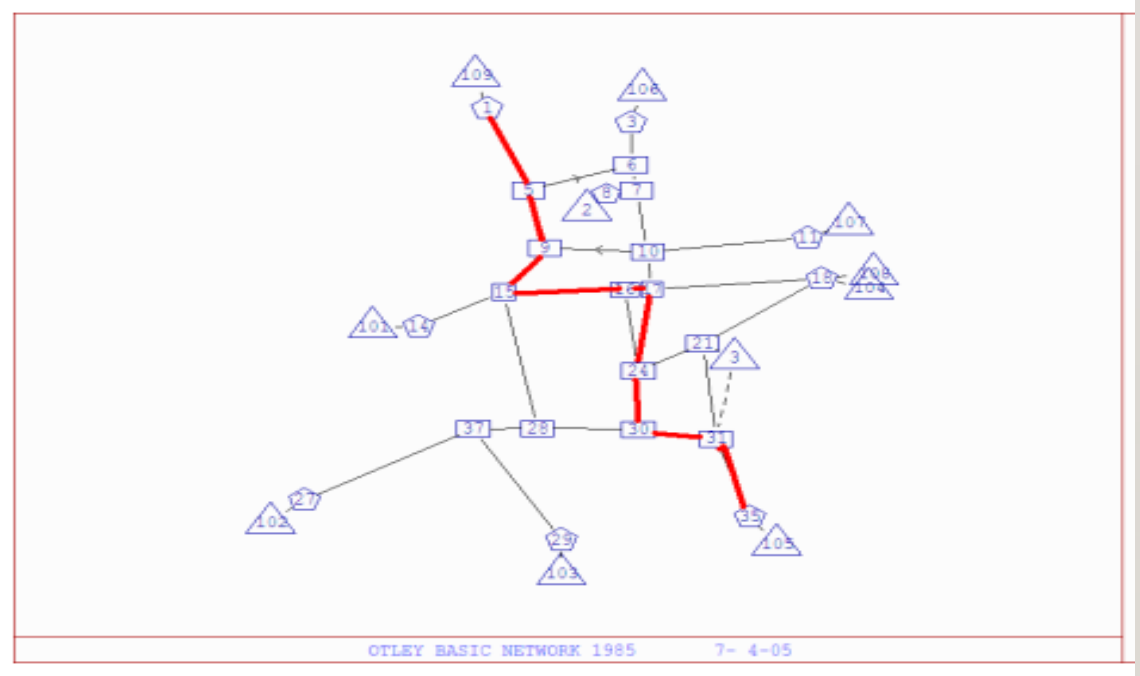
  - Signalized Roundabouts

- Software

  -Linsig

TRAFFIC NETWORK MODELLING

- Saturn
- Dracula



SYSTEM DYNAMICS: MODELLING POLICY

- System Dynamics

-System dynamics is a methodology and mathematical modeling technique to frame, understand, and discuss complex issues and problems.

-Originally developed in the 1950s to help corporate managers improve their understanding of industrial processes

-SD is currently being used throughout the public and private sector for policy analysis and design

DISSERTATION

- Research Topic

  -Freight and Logistics in Agricultural Sector in Developing Countries, A Case Study in Bangladesh

- Supervisor

  -Professor Anthony Whiteing

- Methodology

  -Vensim (SD software)

REASON BEHIND CHOOSING THE TOPIC

- Food Security

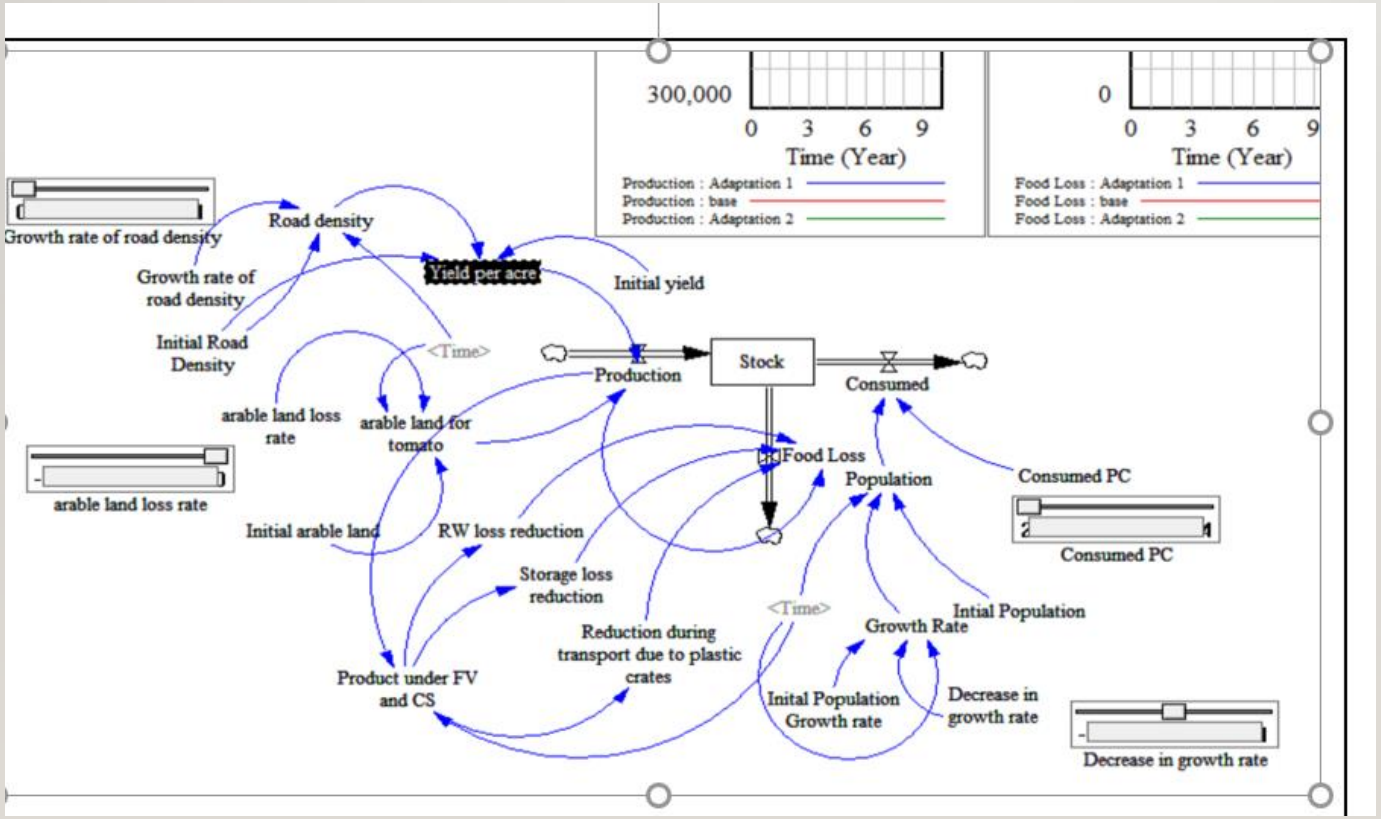
  -720 million to 811 million people are facing hunger today (FAO, 2020)

- Increasing Demand
- Food Loss and Waste
- The target has been set for SDG 12.3 to reduce the food loss and waste by 50% within 2030.
- More Important for a developing country like Bangladesh.

AIMS AND OBJECTIVES

- To find out the impact of the transport and logistics on the reduction of food loss
- To show how a system thinking or system dynamics can shed light on the complex system of food supply and distribution from the perspective of logistics and transport services
- To make a quantitative analysis of supply chain of tomatoes, and to create different probable scenarios based on some transport and logistic interventions

STOCK FLOW MODEL



STOCK FLOW MODEL

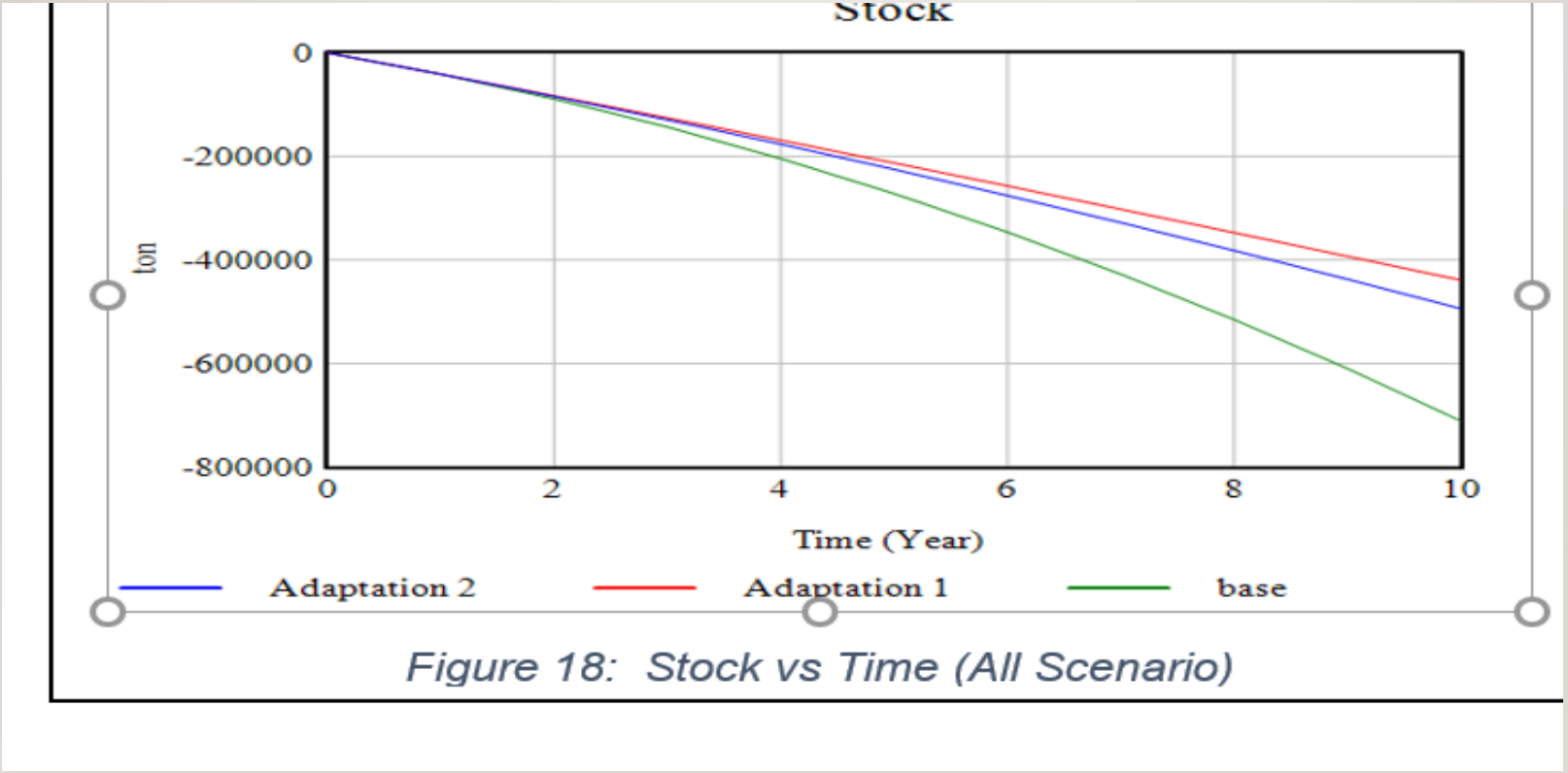


Figure 18: Stock vs Time (All Scenario)

STOCK FLOW MODEL

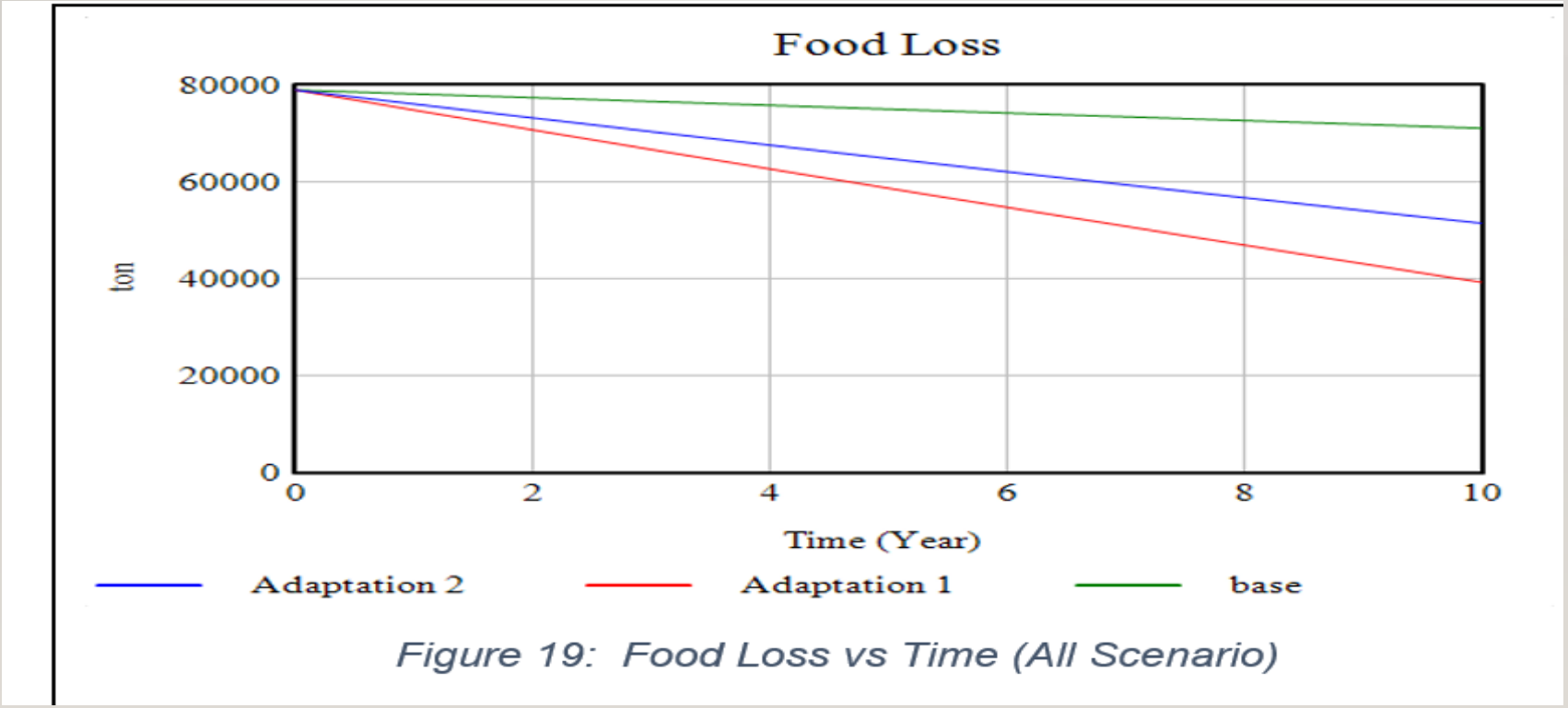


Figure 19: Food Loss vs Time (All Scenario)

CONNECTION WITH LGED

- This personal development is also enriching the organization, i.e.; LGED
- This study might be helpful to take any new plan for the development of the country, specially for the road network.
- Further study and research works on the topic chosen for the dissertation might be helpful to make a well organized plan for the food supply chain involving farmers, co-operative, road network and chain supermarket and that can play a great role to reduce the food loss, to stabilize the price of food over the year and obviously to gain the target of no hunger of SDG.


THANK
YOU