

# **BUSINESS INTELLIGENCE FOR FERTILIZER SECTOR**

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1

## **AGRICULTURE SECTOR**

- **ROLE OF AGRI IN SOCIO-ECONOMIC DEVELOPMENT**
- **ROLE OF FERTILIZER IN THE GROWTH OF AGRI**
- **3<sup>RD</sup> LARGEST PRODUCER+CONSUMER IN THE WORLD**
  
- **TO DISCUSS ABOUT**
  - HOW BEST IT CAN HELP**
  
- **SUPPORT FROM NIC TO FERTILIZER MINISTRY**

2

## **NIC SUPPORT TO FERTILIZER MINISTRY**

- **MIS APPLICATIONS**
- **IN THE AREA OF QUANTITATIVE MODELLING**
  1. **DEMAND FORECASTING ON A REGULAR BASIS**
  2. **OPTIMAL TRANSPORTATION AND DISTRIBUTION SYSTEM FOR FERTILIZERS**
  3. **OPTIMAL IMPORT PLAN FOR DAP**
- **UPGRADED THE TECHNOLOGY AND METHODOLOGY**
- **FROM MULTIVARIATE TO REGRESSION MODEL TO ARIMA MODEL**
- **TOOLS: AUTOBJ, SPSS AND INHOUSE DEVELOPED BASED ON ARIMA MODEL & NEURAL NET.**

3

## **FORECASTING PROJECTS**

1. **FERTILIZER DEMAND FORECASTING FOR DEPT. OF AGRI & COOPERATION.**
  - **LONG TERM PLAN (FIVE YEAR PLAN)**
  - **MONTHLY PROJECTION OF DEMAND AT MICRO LEVEL FOR STATES FOLLOWED BY MACRO LEVEL FOR ZONAL/ALL INDIA.**
2. **SHORT TERM PLAN (ANNUAL) FOR STATES, ZONES AND ALL INDIA.**

4

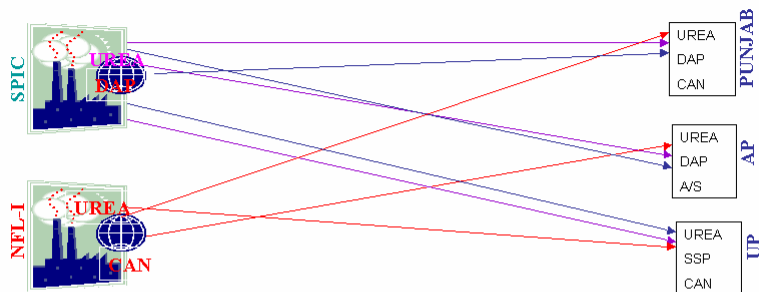
## OPTIMAL DAP IMPORT PLAN

- **MULTIOBJECTIVE OPTIMIZATION APPROACH**
- **MODEL INCLUDES**
  - BUDGET CONSTRAINT**
  - UNLOADING AT THE PORTS**
  - RAW MATERIAL BLENDS & ITS COSTS**
  - TIME AVAILABILITY**
  - DEMAND**
  - ⋮
  - ⋮

**ANNUAL SAVINGS: APPROX. 200 CRORES.**

5

## GENERALIZED MULTIOBJECTIVE TRANSPORTATION & DISTRIBUTION SYSTEM



- SUPPLY CENTRES
- TYPE OF FERTILIZER PRODUCTS
- DEMAND CENTRES
- DEMAND-FERTILIZER PRODUCTS
- ✓ **MOVEMENT RESTRICTION**
  - ✦ LOADING CONSTRAINTS
  - ✦ UNLOADING CONSTRAINTS
  - ✦ VEHICLE RESTRICTION
  - ✦ COST OF MOVEMENT

### ✓ SPECIAL PREFERENCE MOVEMENT

- MODE-WISE DISTANCE
- ROUTE CONSTRAINTS
  - AVAILABILITY OF VEHICLES
  - TYPE OF VEHICLE
  - VEHICLE CAPACITY
- † MINIMUM DEMAND TO MEET
- ✦ BUDGET CONSTRAINTS

6

## **MULTIOBJECTIVE OPTIMIZATION SYSTEMS**

- 1. FERTILIZER MOVEMENT SYSTEM FOR MINISTRY OF AGRICULTURE & COOP.**
- 2. TRANSPORTATION SYSTEM FOR IFFCO**
- 3. PDS COMMODITIES OPTIMAL DISTRIBUTION & MOVEMENT SYSTEM FOR GUJARAT**
- 4. FOODGRAIN MOVEMENT SYSTEM FOR FCI (MODEL ONLY)**

7

## **FORECASTING FOR WHAT (OBJECTIVE)?**

- 1. FOR LONG TERM PLANNING.**
  - 2. FOR SHORT TERM PLANNING**
- \* ALL THE FACTORS WERE THERE BEFORE ALSO. ITS IMPACT VARY FROM TIME TO TIME.**
  - TO IDENTIFY & TO KNOW THE SIGNIFICANCE OF THE INFLUENCING FACTORS.**
  - TO CONTROL EXTERNALLY**
  - TO GENERATE FORECASTS BASED ON TIME SERIES.**

8

## WHERE WE STAND NOW?

- WELL ESTABLISHED COMPUTER NETWORK (NICNET)
- TRAINED MANPOWER
- LARGE NO. OF DATABASES AND MIS APPLICATIONS
- WEB BASED SOLUTIONS

### THE NEXT LOGICAL STEP

- ADOPT NEW TECHNOLOGIES FOR EFFICIENT PLANNING AND DECISION MAKING

### HOW?

- USING BI TECHNOLOGY
- BY CREATING KNOWLEDGE CENTRE

9

## BI FOR FERTILIZER SECTOR

- WEB BASED APPLICATIONS IN MAJOR AREAS:
  - PRODUCTION
  - MOVEMENT
  - CONSUMPTION
  - IMPORT OF RAW MATERIAL & FINISHED
  - FERTILIZER EQUATED FRIEGHT FIXATION
- TO INTEGRATE AND CATER TO THE NEEDS OF THE FOLLOWING
  - G2G
  - G2B
  - G2C

10

## **BI FOR FERTILIZER SECTOR**

- **BEFORE INTEGRATION**
  - STAND ALONE APPLICATION SYSTEMS RUNNING EVERYWHERE (TO MANAGE YOUR DAY TO DAY BUSINESS)**
- **AFTER WAREHOUSE**
  - STAND ALONE APPLICATION SYSTEMS RUNNING EVERYWHERE (TO MANAGE YOUR DAY TO DAY BUSINESS)**
  - INTEGRATED SYSTEM FOR PLANNING DECISION MAKING AND FOR LOT MANY ANALYSIS.**