

# Quantitative Summary Document

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The game has been continued on from the last mission of FOOD FORCE I in which the user is given a task to rehabilitate a village.

In FOODFORCE II we provide the player with some initial resources and some money and we ask him to setup facilities like hospitals, schools, workshops etc. which increase the indicators of the village. These indicators describe the level of prosperity and development in the village. The Resources, Indicators and Facilities are listed below -:

## RESOURCES -:

- 1.1. Building Material
- 1.2. Tools
- 1.3. Medicine
- 1.4. Books
- 1.5. Water
- 1.6. Food -: This resource is further classified
  - a.) Rice
  - b.) Wheat
  - c.) Beans
  - d.) Sugar
  - e.) Salt
  - f.) Oils

## INDICATORS -:

- 1. Housing
- 2. Health
- 3. Nutrition
- 4. Education
- 5. Training

## FACILITIES -:

- 1. House
- 2. Hospital

3. School
4. Workshop
5. Farm
6. Fountain

Other than the resources listed above the player is also provided with Money through which he can buy resources from the market and also increase the money of the village by selling the surplus resources produced by the facilities in the village.

The price of each resource is dependent on the market forces i.e the amount of the resource which is present with the village and the market with respect to the maximum amount of resources they can hold.

The player is also required to handle his Manpower resources , he would also be required to take care that he has enough manpower resources to work on different facilities and also to construct them. At the start of the game, the player would be provided with some manpower , money and only some of the resources and he would be required to setup the facilities.

Facilities consume some resources and produce some resources too and they increase the indicator levels of a village. The user would be provided with some initial building material, tools, water, medicine and food (which is distributed in sub classes). To build the facilities he would be required to have some building material, tools and water. Also some of the manpower would be employed to construct these facilities, once the construction is complete these manpower resources would be dis-allocated or made free.

And once the facilities are constructed they would be requiring some resources to run them and also they would be allocating some manpower resources too, for running the facility.

e.g if we consider the construction and working of a hospital We would require some initial building material presently taken as 25 units, tools taken as 20 units and water taken as 8 units,(all these constants have been defined in a constants file which can be appended) also it would require 10 people to build

that facility. Once the building of the hospital is complete these people would be dis-allocated and would be added to the pool of unemployed people. Once the building of the hospital has been complete it will be using medicines as resources and would be increasing the number of people which are being provided health.

But there are some restrictions also, i.e if there are not enough manpower or resources to construct/run a facility the program will raise an exception and tell the user that he cannot establish the facility due to insufficient resources, also it would tell that which resource is insufficient.

Also if the resources that a facility is using for running fall less wrt the requirement , then the facility is temporarily stopped and it can be resumed once the user provides enough resources for the facility to run either by buying them from the market or if any other facility produces them.

We also take care that each person in the population is employed at only one place, we do so by maintaining a record of all those people who are currently unemployed and allocating manpower to build or work at a facility only through those pool of unemployed people and add the no of people unemployed if work of any person finishes. Also we have made provisions to increase the population of the village at certain intervals. All other resources except food and the facility farm are maintained in the same way as that explained for the hospital.

Regarding food it has been divided into sub-categories of rice, wheat, beans, sugar, salt and oils. Each of these items are provided a nutritive value in terms of “vitamins”, “protiens” and “carbohydrates”. This will teach the player importance of a balanced diet for an individual. The nutrition indicator depends on the quantity of food (keeping in mind the total need, its actually considering the number of people who can be fed by that amount of food) that is being produced and also the quality of the food that is being produced. By, quality i mean that whether or not the food is containing the right balance of vitamins, protiens and carbohydrates.

We can specify with every farm, what amount of food the farm can produce and allow him to select that what percentage of each food item does he wants to produce.

Also, we have provided the player with an option of upgrading his facilities, upgrading a facility does consumes some resources but no manpower is required to just upgrade the facility. Upgradation of facility increases the consumption of resources by the facilities and also increase the production of resources by the facilities although the increase in production is double than the increase in consumption of the resources. It is assumed that upgradation of facilities does not require more manpower to run those facilities.

Another important factor is time, it is always increasing with each turn but we stop the time temporarily when the user wants to buy or sell resources as we need to provide him with a separate menu to buy and sell the resources. We do the same thing when we ask the player to enter the percentages of different food items that he wants to produce in the farms.

And regarding the natural calamities like earthquakes, floods and famine. We can do them easily through the current code base by making the following changes in the database -:

1. Earthquake -: We can reduce the no of installations of some of the facilities like Hospitals, Schools , Houses and Workshops as an earthquake wouldn't be affecting installations like Farms and Fountain. We can also decrease the population in such a scenario.
2. Famine -: In such a scenario we can heavily decrease the production of he farms and also increase the price of food commodities.
3. Floods -: Here we can increase the village quantity of water to a great extent, thereby decreasing the price of water. We can also decrease the production of farms and stop the working of a few facilities for certain number of turns.