



THE FOODFACTORY PROJECT

ASSIGNMENT

Assignment for WUR, HHG16 (Balancing People, Planet, Profit)

Amsterdam, September 2008

Drs. Bart T. Hogebrink – IniVention

ASSIGNMENT: FEASIBILITY OF FOOD FACTORIES.

INTRODUCTION

The goal of this assignment is to examine the technical, social, ecological and economical feasibility of an operational FoodFactory in developing countries, and to specify the requirements. The research should evaluate both approaches:

- A high quality, medium quantity FoodFactory made from pre-fabricated building blocks to be built and operated by skilled WFO-employees
- A high quantity, medium quality and very basic FoodFactory that can be made out of scrap metal, like oil barrels, at any workplace.

The following questions and requests are suggestions to reach the goal of the assignment.

TECHNICAL FEASIBILITY

1. Specify FoodFactory requirements by collecting data on growing crickets and grasshoppers, like:
 - a. Growing time & growing speed
 - b. Optimal growing conditions (temperature, humidity, ventilation, etc)
 - c. Acceptable food, preferably not for human consumption
 - d. Food conversion factor
 - e. Required space per insect
 - f. Nutrition values
 - g. Life expectancy
 - h. Ideal harvesting age
2. How can insect based food be conserved?
3. How many kilograms of insects must a FoodFactory produce to feed an average village?
4. How many insects can live in 1 m³?
5. How can the quality of the insects be monitored?
6. What similar attempts have been made to industrially raise insects? Were they a success or did they fail? Why? How can they be improved?

SOCIAL FEASIBILITY

1. What country is most suitable for implementing the FoodFactory project? This country should at least comply to the following: a) it has a serious food shortage, b) it is relatively common to eat insects, c) it has vegetable surplus that is edible to insects, but preferable not to humans.
2. For this country, answer the following questions:
 - a. How common is it to eat insects? (% of population)
 - b. What insect species are popular?
 - c. What is the best or most popular end-product (raw, cookie, flour, other)?
 - d. What is the recipe of this end product?
 - e. How many insects per person are consumed?
 - f. How often are meals containing insects consumed?
3. Do most consumers buy them on the market or do they catch them themselves?
 - a. If bought, for what price?

- b. If caught, in what amounts (per consumer)?
 - c. Are they being dried or conserved otherwise?
- 4. In what seasons are what insect species available?
- 5. Would consumers like to eat insects more often?
 - a. If so, what insects, why and how often?
 - b. If not, why not?
- 6. Would consumers like to rear insects if they had the equipment and knowledge?
- 7. What reason do non-insect-consumers have not to eat insects?
 - a. Would they eat food containing grinded insects? If not, why not?
- 8. How many people suffer from hunger?
 - a. Would people who suffer from hunger oppose eating insects? If so, why?
- 9. What problems can be expected when introducing an insect-rearing installation?
 - a. What opposition can be expected, and from who and why?
- 10. What scrap materials are freely available that could potentially be used to build a basic FoodFactory? (Wood / oil drums / metal plates etc).

ECOLOGICAL FEASIBILITY

- 1. How much more efficient are crickets and grasshoppers in converting vegetable food into nutrients than cattle?
- 2. What insect species will eat local vegetable waste products?
- 3. What vegetable waste products are a) freely available in the country of choice, and b) nutritious to grasshoppers and crickets? (for example: fruit, loaf, leafs, surplus from human food or from food production companies, etc)
- 4. How much CH₄ is produced and how does this amount relate to average cattle CH₄ production?
- 5. Are there any threats to a suitable production of insects, like diseases?

ECONOMICAL FEASIBILITY

- 1. What costs and profits will be involved?
- 2. How could a FoodFactory be made financially self-sustainable, and still alleviate hunger?
- 3. What companies could be interested in the FoodFactory project, and why?

GENERAL ASSIGNMENTS

- 1. Do a market research
- 2. Make a business plan
- 3. Find suitable subsidies & grants