

# Improving cancer prevention in developing countries: educational Alimentation and Agriculture communication is essential

## **Introduction**

The pathology of cancer reaches more and more people around the world. Originally specific to developed countries, this disease is becoming more present in many developing countries. This quick development of cancers is due to the industrialization and the new American way of life adopted by these populations. Indeed, the effects of globalization on these countries, through some environmental factors as alimentation and agriculture, have a real impact on cancer incidence.<sup>1</sup>

In developed countries, technologies, expertise, but also, the availability of relevant statistical data, enable timely detection, support and access to an appropriate treatment.

However, in developing countries, we observe that detection is not practiced at all. The requisite biomedical equipment is too expensive and the availability of qualified medical staff is limited. Moreover, the treatment is too expensive for the majority of patients, and is poorly organized. That's why access to appropriate treatments and medicines are not easy. Also, in these countries, social inequalities linked to alimentation are very important. Economically, it is very difficult to be able to intercede to prevent the risk of cancers.

## **Methodology**

During six months, research was conducted at the Food and Agriculture Organization of the United Nations (FAO)<sup>2</sup> on three countries

among members of the International LaSalle Network<sup>3</sup>: Brazil, Philippines and Mexico.

Official sources on the Internet (WHO<sup>4</sup>, IARC<sup>5</sup>, WCRFI<sup>6</sup> ...), FAO statistics databases (FAOSTAT) and FAO's publications were studied and analyzed for these three countries:

- Lifestyles
- Food habits
- Agricultural practices
- Health habits & practices.

To complete this analysis, a questionnaire was created using SPHINX software and sent to competent authorities of the three developed countries in the study. Composed of 80 question in four parts (describe on top), the questionnaire also asked respondents to provide sources, to verify their reliability. Several persons could form groups to fill the questionnaire, in keeping with their respective skill sets.

## **Results**

### **1. Alimentation and Cancer**

#### **Observations**

- Diet of most of the population has to be re-balanced. Indeed, usually, these are too high in fat and fried food and meat. Conversely, consumption of vegetables is too low.
- Also, dairy products and fruits are not eaten enough.

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<sup>1</sup> OMS/FAO, 2003. Report of a joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases, Geneva, Switzerland.

<sup>2</sup> FAO, [http://www.fao.org/index\\_fr.htm](http://www.fao.org/index_fr.htm)

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<sup>3</sup> Réseau LaSalle International, <http://lasallefrance.fr/-Une-dimension-internationale->

<sup>4</sup> WHO. World Health Organization, <http://www.who.int/fr/>

<sup>5</sup> IARC. International Agency for Research on Cancer, <http://www.iarc.fr/>

<sup>6</sup> WCRFI. *Food, Nutrition, Physical activity and the Prevention of Cancer : a global perspective*, Washington DC (USA), 2007, <http://eprints.ucl.ac.uk/4841/1/4841.pdf>

- A large part of these populations eat an insufficient quantity of vegetables (all types of vegetables and particularly green vegetables) and fruits. Nutrients, vitamins (selenium, vitamin A, C, E; carotenoid and beta-carotene; lycopene; alpha-tocopherol) that are contained in these foods can help prevent cancer. Fish and Seafood, which are also poorly consumed, contain all these nutrients and vitamins.
- Overall, intakes in fat (as desserts and Food Industry snacks, which have a high level in sugar and fat) are too high.

### **Recommendations**

- It is important to emphasize vegetables, fish, fruits and dairy-products consumption for the local population instead of fat and fried foods:
  - By modifying their bad food habits in the urban and rich areas which have enough financial resources to buy healthy food or good culinary preparations. Also, in these areas, the access is easier compared to the rural or poor areas.
  - By improving the availability of healthy and diversified foods with accessible prices in all poor areas with poor populations, whose access to foods is not easy.
  - By organizing food production within the country. The aim is to allow the population to have access to their own agricultural resources which are actually totally earmarked for export.
  - By developing efficient facilities within these countries to improve the distribution of agricultural products in disadvantaged areas.
  - By limiting animal-fats consumption compared to vegetable oil. Moreover, to favor foods such as yoghurt to season meals instead of oils.
- It is necessary to explain to these populations the purpose of eating dairy products and fruits for dessert or snacking.

Their nutritional qualities are more interesting than all other sugar and fat foods. But it is clear that the supply chain has to be efficient to improve and preserve food quality.

- It is important to increase awareness among government authorities, public health staff and local industry of best (and worst) culinary practices.
- To avoid a greater risk of cancer, it is advised to not eat too much red meat. The most important practice is to diversify protein intake (fish, seafood, eggs or plant oil).

## **2. Agriculture and Cancer**

### **Observations**

After the study of agricultural practices in these three countries, it was observed that:

- GMO agriculture is practicing in the three countries analyzed. This kind of agriculture is linked with cancer incidence as shown in several recent studies, warranting further research.<sup>7</sup>
- Farmers in Brazil, Philippines and Mexico are using a great deal of chemical products believed to be carcinogens.
- Overall, the most prevalent type of agriculture is the intensive and conventional kind, with a high use of pesticides and a quantity-over-quality farming objective.

### **Recommendations**

It is proven that the use of pesticides in intensive and conventional agriculture is bad for the environment and for human health. Also, the requisite chemical products for these farming practices represent a large financial burden for farmers.

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<sup>7</sup> SERALINI G.E., 2012. "Longterm toxicity of a Roundup herbicide and Roundup-tolerant genetically modified maize." Study published by *Food & Chemical Toxicology* 16 August, 12 pages.

With GMO, the cost consequences are even more alarming. Indeed, GMO seeds can be used only once, forcing farmers to buy new seeds each year (or season) and increasing their dependence on their suppliers.

That's why, rational or organic agriculture would be better because it is more respectful of both the environment and human health.

In considering the example of France, the demand for organic products is the only economic variable showing double-digit growth in 2012. In addition, some studies led on The Philippines show that farmers practicing this kind of agriculture (specifically, organic), see their profits increase more significantly than farmers who are practicing intensive and conventional agriculture.

### **Action Plan**

#### **1. The fundamentals of a communication campaign to prevent cancer risks**

This education track has to be privileged. The aims of this education communication campaign are:

- To explain to local populations, the part played by a healthy and diversified diet to staying in good health and also, the link between diet and cancer.
- To explain the link between obesity and cancer.
- To insist on bad effects of "junk food" in the development of obesity and health problems.
- To promote the good food habits linked to cancer prevention, emphasizing the intrinsic qualities of foods but also the supply-chain, household and culinary practices used.
- To explain the role of agricultural practices to cancer risk.
- To promote agricultural best practices, the cessation of GMO utilization and a rational use of pesticides.

- To encourage the southern countries, which produce a lot, to reserve a part of their production for their own populations who often suffer from malnutrition. Also, governments need to realize that it is not necessarily the best thing to produce only for export.

The implementation of this campaign has to be undertaken by the local governments of each of the countries studied. To maximize awareness among these populations, the governments should call upon the most influential private-sector actors, who are responsible for the national food supplies and therefore, *de facto* responsible for its transformation. This would in turn necessitate a training programme for the staffs of all parties in the supply chain.

#### **2. A campaign adapted for each country.**

Lastly, the concept of Social Marketing [LATHAM M.C, 2001]<sup>8</sup> should be used in these developing countries to manage this educational Alimentation and Agricultural communication campaign.

By definition, social marketing requires prior study, using targeted focus groups and interviews, of the lifestyles of these populations, their habits and the reasons for them, in order to factor in their needs. This helps determine the most important problems in the country, and to imagine and develop specific solutions to be able to choose the best and most appropriate messages, media and target populations. To be effective, these messages must respect individual freedoms and local cultures.

Introduced by the French government in the end of 2010, the Programme National

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<sup>8</sup> LATHAM M.C., 2001. *La nutrition dans les pays en voie de développement*. Collection FAO : Alimentation et nutrition, 517pages.

pour l'Alimentation [PAN, 2010]<sup>9</sup> has the aim to “give for each person the way to know, obtain and appreciate the French alimentary richness. A real pact between farmers and consumers, this program aims to guarantee sufficient and accessible alimentation for all”.

This kind of action plan, already drawn up in some developed countries, could serve as an example and adapted in terms of the real situation in emerging countries. To do this, food specificities of each country have to be determined to make all inhabitants aware of the “local food wealth” available in their country, from a perspective of “health benefit” and preventing cancer risks.

Moreover, the demand in developed countries for healthy and quality products is increasing. In reality, it is the emerging countries which produce for the developed ones according to elaborate specifications, which must be respected. Developing countries can make advantage of this momentum to adopt, from developed countries' way of thinking, an agriculture which grows quality products and is not exclusively focused on productivity.

### **Conclusion**

Absent a method to improve detection or the therapeutic treatment of cancer, an educational solution is the best one available, and would be the most appropriate for all countries studied. Local governments can use it to try to decrease cancer risk. LaSalle Beauvais<sup>10</sup> in a partnership with FAO has decided to invest in this mission to inform and train all

alimentary chain's actors of “southern countries”.

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<sup>9</sup> PAN, 2010. *Programme National pour l'Alimentation*. Gouvernement Français, September, 76 pages. Available at <http://alimentation.gouv.fr/IMG/pdf/PNA-09022011.pdf>

<sup>10</sup> LaSalle Beauvais (Institut Polytechnique), <http://www.lasalle-beauvais.fr/>