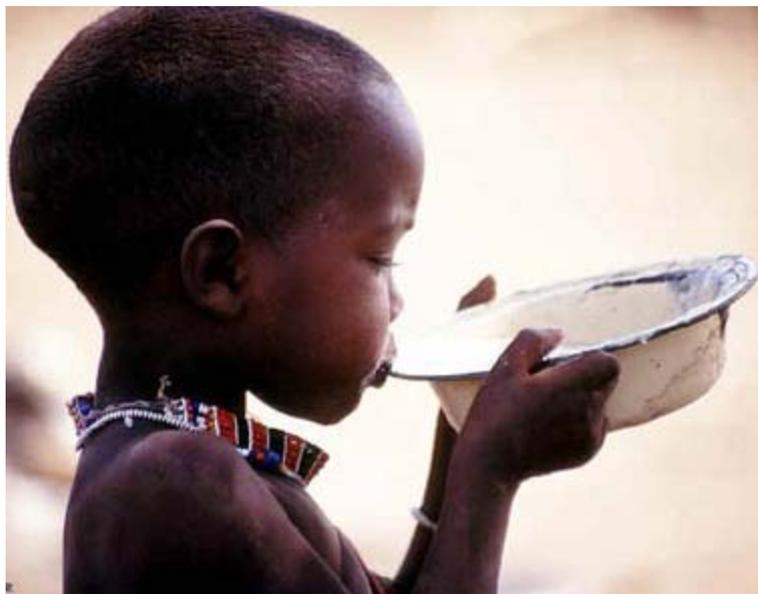


**- FOOD for BRAIN & BRAIN for FOOD: an ERA endeavour to stop Malnutrition in Africa-**

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[http://wikipazia.org/index.php?title=Tematiche\\_prioritarie](http://wikipazia.org/index.php?title=Tematiche_prioritarie)
- see below : NOTE on EU-call For Africa -



**SEARCH FOR PARTNERS: FtoB//BtoF - EU Project fight against malnutrition in sub-Saharan Africa**

- Food and nutrition interventions in AFRICA play an important role in the global response to the sustainable future world wide development . The basic aim is to achieve an effective contribute to the Millennium Development Goals / 2015 to ERADICATE EXTREME POVERTY and to cut HUNGER and MALNUTRITION. -

<http://www.un.org/millenniumgoals/>

**Project Title: FOOD for BRAIN & BRAIN for FOOD:**  
(in achronim **FtoB//BtoF** ) an ERA endeavour to stop malnutrition in Africa.

**Key Words:** Brain, Food, Nutrition , Food-security , Africa development.

**World Vision:** Food and nutrition interventions in AFRICA play an important role in the global response to the sustainable future world wide development .

**Rationale :** "BRAIN-FOOD DEVELOPMENT “:

- Malnutrition occur in people who are either undernourished or overnourished , therefore a good nourishment in society is a fundamental a function of advance on farm to fork KBBE projects.
- Malnutrition is a multifactorial complex and problematic issue and it will imperative to design a multidisciplinary research and innovation program to furnish some responses that are commensurate to understanding the complex social and ecological contexts in which malnutrition and hence infection can occur both in referring to the men bodies and minds diseases. .
- Prevention of malnutrition is better than cure treatment, hence the early recognition of malnutrition is an important challenge. Focused on developing an EUROPE//AFRICA cooperation on the emerging category of Food for the Brain. Nutrigenomic's studies put in evidence that early nutrition can influence long term mental performance, cognitive development and behaviour. Nutrigenetics and food bio-technology afford new techniques that enrich nutrition science to aid in the fight against malnutrition.
- The Project proposed by EGOCREANET and partners, would enhance the way forward the Brain Foods Development, building up an open alliance between Nutrigenomics research, Nutraceutical manufacturers, with the sustainment of government bodies and a large collaboration of world wide stakeholders. The main goal will be

to begin a campaign for healthy food products for mental health benefits in order to overcome the dangerous effects of Malnutrition in Africa. [pmanzelli@gmail.com](mailto:pmanzelli@gmail.com)

### **Project Objectives : Food for Brain & Brain for Food**

**AIM : Developing and Disseminating a "Communications and Guidance Program" to Prevent Malnutrition and Food//Feed Security in AFRICA.**

**This aim is driven by fitting the following goals :**

**A)** Primarily the "FtoB//BtoF" will explore through observation studies on Malnutrition the possibility to enhance a cooperative research in Nutrigenomics for improving personalized dietary performances in the various ethnies in Africa in comparison to contemporary European nutritional problems and diseases. The endpoint of this action will have real and defined predictive value for bettering health for child and adult and endely population.

**B)** Secondly the "FtoB//BtoF" would understand the role of specific Functional foods, Nutaceuticals and Micronutrients effects (omega-3 fatty acids, proteins, vitamin B6, vitamin B12, folate, iron and zinc etc..) on early programming in different genetic polymorphisms using functional genomic techniques to further explore the basis of nutrition in mental/body performance in future programming where early targeted interventions are vital for real life in Africa.

**C)** Thirdly the "FtoB//BtoF" would enhance the development of Agricultural product innovation in Africa favouring their creative management in relation to the deep changes in economic, business, competitive, strategic and regulatory factors for human health. This action would be based on development of Nutraceutical Products as is useful to reconsider oxidative stress and cancer risks through an equibrated intake of natural and nutraceutical products , as in the case of the growth of "Flowers Food" and its world wide innovative role getting life-sustaining nutrients and in reducing undernutrition.

**D)** Fourthly the "FtoB//BtoF" will build up world wide research network among, agriculture, fisheries and animal production, to enhance food security and to improve nutritional well-being, and contributing toward eradicating hunger/poverty reduction in Africa through co-operating with the world wide strategy of the "Millennium Development Goal".

The knowledge is a baobab tree; one person can not 'embrace it. "Old African proverb".



*Malnutrition is a transdisciplinary multifactorial complex issue ,connecting Science Industry and Policy for a healthier world*

**Preliminary approach on project feasibility : FP7-KBBE -CALL FOR AFRICA- Dead Line JAN/14/2009**

**AIMS:** The problem of chronic undernutrition in Africa and its direct and indirect effects, are multi-faceted and integrated, and have deep roots in a multiplicity of factors as socio-economic, cultural, environmental, political, scientific, technological and educational factors. In this scenario, the immediate victims are children, especially those under 5 years of age. There seems to be a vicious cycle from maternal and infant chronic malnutrition. The Nutrigenomics science and Nutraceutical production can help the low agricultural food productivity in Africa, favouring to overcome ill-health

vicious circle that make the situation serious and chronic diseases. It means that the structures which bring about this problem need critical re-evaluation, particularly in terms of advancement in nutrigenomics science and nutraceutical production in addition to an increased agricultural quality of food productivity, both in quantity and quality, to enrich a normal nutritional status in Africa.

**GOALS:**

- 1) The project "FtoB//BtoF" would identify the problem of dietary malnutrition (and under-nutrition) especially in relation to young children and infants in all partner's African states analysing issues and literature related to "child care nutrition" both for brain damages and body health.
- 2) Solution to cut malnutrition in Africa will be discussed among "FtoB//BtoF" partners to share ideas for innovative Nutraceutical addition for bettering diets which includes increasing essential metabolites and micronutrients ( vitamins, iron, and zinc and other ingredients ).
- 3) ) Understanding how bio-nutrient factors can overcome the lacking or deficient nutritional sources in the diets in Africa , besides the project "FtoB//BtoF" will identify children-at-risk for malnutrition and target them for improving innovative production of the quality and security of food .
- 4) The Project "FtoB//BtoF" would focuses the association of malnutrition in relation to the more advanced Nutrigenomics science to favour a development of new criteria of nutrition and diets counseling, for specific different ethnies .
- 5) The solutions of malnutrition proposed by the project "FtoB//BtoF will include perspectives towards sustainable agriculture for developing sub-saharian African countries within particular attention to the innovative options coming from life sciences and biotechnologies.
- 6) Since malnourished children are at higher risk the project "FtoB//BtoF would propose short-term interventions getting , as expected results, A) setting in each national partnershi'ps context, appropriated nutritional dietary paedriatic guidelines , B) enhancing nutrition education: about prevention and treatment of infections, food supplementation etc.,C) enhancing prevention conditions to bacterial contamination in food and animal feed security , D) favour agricultural practices for long-term interventions in order to include improvement in the economic and environmental conditions through an better cooperation between Europe //Africa.



**NOTE : Call For Africa : KBBE.2010.2.2-03: EU Activity 2.2** Fork to farm: Food (including seafood), health and well being. : Theme: Identifying research needs on malnutrition in Africa - (Mandatory Africa).

Info to : <[laura.alexandrescu@Tec.europa.eu](mailto:laura.alexandrescu@Tec.europa.eu)> Funding Scheme Coordination and Support Actions (CSA-CA and CSA-SA) up to EUR 1 000 000 Maximum one proposal can be selected for this topic.

Participation of Relevant Industrial Food Partners is requested Minimum partnership : 3 EU partners + 3 from different ( ICPC) from African ACP countries and African Mediterranean Partner Countries (Algeria, Tunisia, Libya, Morocco, Egypt)

[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=268](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=268)

**[Real life about malnutrition in Africa :](#)**



Scene of starving children in the third world , eating with a lack of proteins and vitamins , their bellies distended from kwashiorkor and thus abnormally large , fat out proportion to their bony, arms and legs,

## CORE RESEARCH ON MALNUTRITION

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**Food to Brain & Brain To Food**

The basic idea of **FtoB//BtoF** proposal is to develop an innovative project to change the obsolete conception about nutrition based on a thermodynamic and mechanical equivalence between food and energy, normally measured in "calories" for the diets,; a conceptual change based on Nutrigenomics aim to go forward an advancement of understanding human nutrition for improving **KBBE** ( Knowledge based Bio-Economy)

Looking to operate this change the fundamental endeavour is to modify the current trends about Food nutrition favouring a **Brain for Food** conceptual innovation , this because nutrition till now remains very much a part of popular culture, and the beliefs, practices, and dietology counseling, in a obsolete culture that worldwide affect its eating practices of malnutrition.

### Current Trends

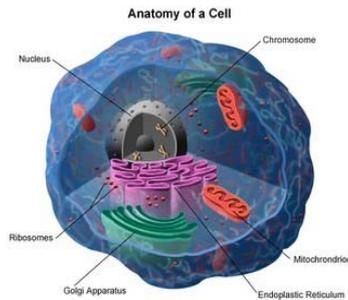
It is a pity to know that there has been today an increasing trends toward food quantitative consumerism, a trend that is reflected in more people eating away from home without thinking about the need to eat functional foods oriented to the metabolic guidelines of the proper DNA that also establish to favour ethnic diversity in diets. Mainstream populations, in **developed countries**, want low-calorie, low-fat foods, as well as , natural, and fresh ingredients. Internationally, there has been a simple "quantification in Calories of diets" through the growth and use of fast-food restaurants and convenience foods, in practice **"malnutrition"** In **developing countries** there is still a need for some basic foods, and governments and the food industry are working to develop high qualitative products that can reduce international food shortages and **nutrient** deficiency problems, in practice a different kind of **"malnutrition"** . With the goal to overcome this status of current trend that get also a **"malnutrition"** " gap between Europe and Africa, EGOCREANET & Collaborators launch the **"FtoB//BtoF"** proposal to ameliorate the contemporary research about nutrition and to innovate the Brain/Body health especially through a better knowledge of **"mitochondrial metabolism"** of ATP, Eme , Colesterol etc.. , in order to develop new criteria of **"personalized diets"** favouring to overcome **Micronutrient Deficiencies**.

The above are the preliminary ideas for reply to the call **KBBE.2010.2.2-03: Identifying research needs on malnutrition in Africa** - Activity 2.2 Fork to farm: Food (including seafood), health and well being.



Our conceptions of how malnutrition endured early in life affecting brain/body development ,have evolved considerably since the 1990s when **Alexander Tzagoloff** discovered the propagation of mitochondria depends on the expression of a small number of mitochondrial genes (**mtDNA**). Mitochondria (Bacterium sised endosymbiotic organelles) residing in most of our cells, convert metabolites from food into biological form of energy (adenosine triphosphate ) **ATP**.

Mitochondria are the only non-nuclear constituents of the cell with their own DNA (**mtDNA**) and a proper system for synthesizing RNA and various proteins. This remarkable capability reflects their descent from ancient bacteria. Each cell contains only one DNA in the nucleus, but hundreds or even thousands of mitochondria and **mtDNAs**. Tissues with high demands for energy, such as brain, and eye, muscle, heart etc.. are particularly vulnerable to mitochondrial propagation of defects or diseases. At fertilization all mitochondria in the zygote come from the maternal oocyte; thus, both **mtDNA** and most of mtDNA-related diseases are maternally inherited. Mitochondrial diseases produces a strong decrease of ATP metabolism that may sometimes be remedied by providing people with micronutrients, antioxidants and vitamins so that the project **FtoB//BtoF** would favour the identification of brain-specific micro nutrients that support function and metabolic bioreactivity underlying both, body health and neuroprotectant activity, through a better mitochondrial functioning.



<http://t2.gstatic.com/images?q=tbn:w5j6enZNDa5DAM:http://www.mitochondrialdnatesting.com/images/mitochondrial-dna-testing.jpg>

Besides recent findings of the function of mitochondria propagation in the all cells, including neurons, indicate that the malnutrition of infants and kids, may be strongly related to a decrease of mitochondrial proliferation; so that the endosymbiotic function of Mitochondria become critical for the functional development multicellular organs of the human body and brain. In particular the deficit of mitochondrial propagation in **neurons** depresses cognitive and emotional responses generating a cascade of stressful events during the adult life . The stress conditions, sometimes become more dangerous than cognitive deficits due to hunger or malnutrition . The age range of critical vulnerability to these long-term effects that links malnutrition ( hunger and eating disorders) to mitochondrial propagation and stress conditions, may be much greater than was suspected before , so that a research on se section of **Food To Brain** project need to verify that also minimal amount of malnutrition can generate long-term alterations of emotional behaviour that strongly limits the opporunity to enrich a well being of poeple during their life.

Furthermore the high mutation rate of **mtDNA** in relation to the nuclear-DNA ( nDNA) not only is important in aging and stress behaviour, but has anthropologic and forensic ramifications. Analysis of **mtDNA mutations** in isolated ethnic groups has shown that each group contains a stereotypical set of naturally occurring mutations not associated with disease ("neutral polymorphisms") . This discovery has opened up the new field of molecular genetic-anthropology and in particular become important field for the development of **Nutrigenomics** in order to favour " **personalized diets** " for health and well being of people tacking in consideration the needs of mithochondrial methabolism in relation to the **various ethnies** of the world.

**Biblio ON LINE :**

**FtoB//BtoF : preliminary proposal :** [http://www.edscuola.it/archivio/lre/FtoB\\_BtoF.pdf](http://www.edscuola.it/archivio/lre/FtoB_BtoF.pdf)

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**Mitochondria & Micronutrients :** [http://dsz.uniss.it/convegno\\_nutraceutica\\_2006/Cairo-Sassari%2006.pdf](http://dsz.uniss.it/convegno_nutraceutica_2006/Cairo-Sassari%2006.pdf)



<http://foodquality.wfp.org/Portals/0/micronutrients.jpg>

## FOOD for BRAIN and BRAIN for FOOD

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"Leave your drugs in the chemist's pot if you can heal the patient with food." (Hippocrates)



### **Natural Pigments & Vitamins**

Given the priority for world population to favor dietary change in agreement with individual genetic factors there is a need for a greater understanding of the determinants that affect food choice to "Identifying research needs on malnutrition in Africa". The main concept and ideas that led the proposed project "FOOD for BRAIN & BRAIN for FOOD" ( in achronim : "FtoB&BtoF") are focused in the following general considerations on a paradigm shift on Nutrition Science

### **Current Trends**

Food is very much a part of popular culture, and the beliefs, practices, and trends in a culture affect its eating practices. There has been an increasing trends toward food "quantitative consumerism", in a way that people loose the quality of natural and traditional food eating. So that mainstream populations in developed countries want low-calorie, low-fat foods, as well as simple, natural, and fresh ingredients.

From the cognitive point of view internationally it is affirmed the behavior to an " quantification in Calories of diets" and this quantitative focus is becoming a serious impediment to understand the effective quality of food in relation to health, determining as an conceptual consequence, malnutrition effects as obesity and other chronic diseases from bad alimentary origin.

In developing countries there is still a need for some basic foods, and governments and the food industry are working to develop high quantity of products that can reduce international food shortages and nutrient deficiency problems, forgetting the important question of the quality of food through improving nutritional contents to change the dietary intake is more important that quantity because quality of food is effectively what it is needed to avoid malnutrition .

### **Overcoming Current Trends**

In the past, nutrition research has been limited to a few 'likely' dietary compounds, a handful of relevant biochemical pathways. Today Nutrigenomics is the science examining the response of individuals to food/ food components using post-genomics technologies and it allows a more holistic approach. Its long-term aim is to understand how the whole Brain/ Body responds to real foods, and determine how individuals can benefit their health through dietary choice. The huge advantage in this approach is that the studies can examine people (i.e. populations, sub-populations – based on genes or disease – and individuals), food, life-stage and life-style without preconceived ideas. Therefore a novel way of thinking about nutrition and health is done by Nutrigenomic science giving a great cultural and scientific implication to the future overcoming of the status of current trend of understanding about nutrition permitting to innovate the Brain/Body health through "personalized diets" , hence, in a way that will be able to take in consideration Human Genetic Variation and Nutrition , focusing the needs of healthy food in relation to different worldwide ethnic populations.

Today the interest on nutrigenomics science is growing at an exponential rate this because it has already caused a paradigm shift in our approach to nutrition and health through implementing the value of the quality of food as the basis on which safety of nutrients should be assessed to extend an united network of Knowledge Innovation Community across Europe and Africa.

The goal to understand how nutrient composition in a person's diet would be expressed in according to gene-based nutrition planning certainly could play a significant role in "Identifying research needs on malnutrition in Africa " for preventing chronic disease .

So that the "FtoB&BtoF" project would take in consideration that bad diet can be a serious risk factor for a number of diseases caused by malnutrition factors, this because all living organisms have to respond to their environments.

Hence to assess the degree to which diet influences the balance between healthy and environmental factors, the project "FtoB&BtoF" would focus the "mitochondrial genetic makeup activity" in metabolism to understand how, different individual belonging to various ethnic population , may require different levels of

micronutrient as vitamin, antioxidants, carotenoids, flavonoids etc, in order to Identifying advanced nutrigenomic's research needs on malnutrition in Africa.

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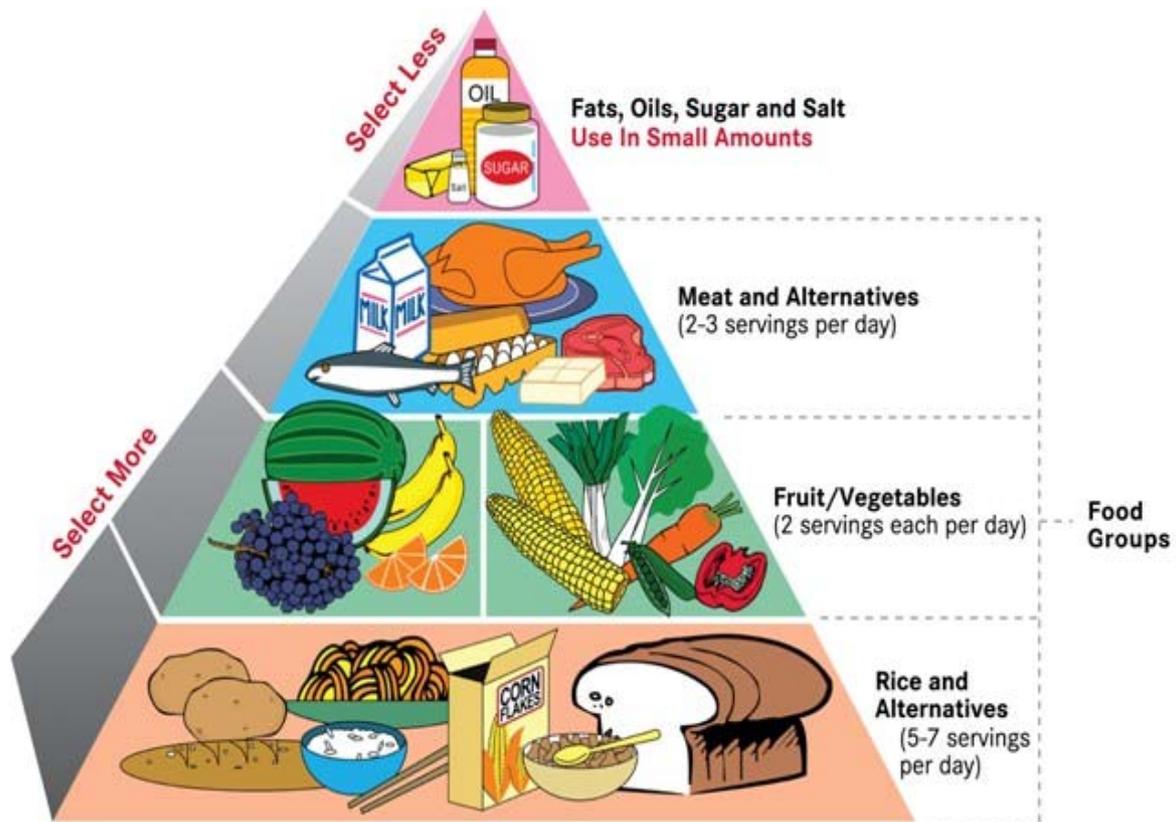
On the basis of such key idea we would develop a EU proposal for the Specific Action : FP7 KBBE.2010.2.2-03: on the issue: Identifying research needs on malnutrition in Europe and in Africa , and I ask to you if you like to be partner or stakeholder or eventually as a sustainer.

*Search for partners for the Call for Africa 2010 , Specific Action : KBBE.2010.2.2-03: on the issue:"Identifying research needs on malnutrition in Africa "*

*The title of the project proposal launched by EGOCREANET// Nutrigenomic's KIC Knowledge Innovation Community) is: Food for Brain & Brain To Food. In achronim: "FtoB&BtoF" see :*

[http://www.edscuola.it/archivio/lre/FtoB\\_BtoF.pdf](http://www.edscuola.it/archivio/lre/FtoB_BtoF.pdf)

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