ANNEXE 2

Annexe scientifique et technique

PNRA
APPEL A PROJETS 2007
Dossier scientifique n° 6.6

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Titre du projet

Politiques alimentaires et d'information nutritionnelle des consommateurs : quelles contributions respectives à la maîtrise des bénéfices/ risques de santé ?

Title of the project

Food Policies and Nutritional Information of Consumers: respective roles for public health regulation

ACRONYME/ ACRONYM (maximum 20 caractères)

ALIMINFO

Signature du coordonnateur du projet	Signature du Directeur d'Unité ou du Directeur de l'entreprise
	Directeur Unité LORIA L.G. Soler *Fonction, nom, prénom*

Résumé en français en 1000 caractères maximum (espace non compris)

La prise en compte croissante des enjeux de santé liés à l'alimentation conduit à l'instauration d'un dispositif d'intervention publique qui pourrait reposer, à terme, sur une combinaison de politiques jouant de façon simultanée sur le « triptyque » information des consommateurs - prix - caractéristiques des aliments. La mise en place de ce dispositif fait face à de nombreuses difficultés qui tiennent aux incertitudes quant aux impacts des mesures envisagées sur les apports nutritionnels des populations, et aux oppositions entre les représentants de l'industrie, des consommateurs et les responsables de santé publique quant à l'opportunité de certaines actions. Pour cette raison, il est important de bien cerner dans quelle mesure, et sous quelles conditions, la combinaison de ces actions jouant sur l'offre et la demande alimentaires peut, de façon efficace, faire évoluer les apports nutritionnels des consommateurs, en particulier appartenant aux catégories les plus confrontées aux risques de santé. C'est l'objectif de ce projet qui mobilise pour cela des équipes de recherche relevant de disciplines différentes (économie, sociologie, nutrition, science des aliments).

Abstract in english 1000 characters maximum

The growing awareness of the health issues in many countries is leading to the progressive implementation of a **public "policy-mix"**, which could ultimately be founded on a combination of actions aimed at influencing consumer information, prices and food characteristics. This policy, however, addresses a number of difficulties which are due to the uncertainty of the actual impact of the projected policy on dietary intake. Another difficulty is the strong disagreement between industry representatives, consumers and public health officials regarding the desirability of some these actions. For these reasons, it is important to determine **to what extent these interventions can effectively change dietary intake of consumers,** especially those who belong to lower income groups. In order to reach this goal, the present research project will assemble research teams coming from different disciplines (economics, sociology, nutrition, and food engineering). They will collaborate for assessing under what conditions general information campaigns, labelling and health claim regulations, on the one hand, firms' and public authorities' interventions for improving food characteristics, on the other hand, can have positive effects **from a public health point of view.**

DESCRIPTION DU PROJET SCIENTIFIQUE/*SCIENTIFIC DESCRIPTION*

Maximum 20 pages (hors CV, publications et fiches descriptives des unités), answers of all items must be given (police Times New Roman 12 ou Arial 10)

1 - MODIFICATION DEPUIS LE PROJET SIMPLIFIE (partenaires, budget, programme)/ CHANGES SINCE THE SHORT PROPOSAL (partners, budget, research program) (½ page maximum)

Improvements have been made to this proposal following the remarks made by the referees. The WPs have been "packaged" differently. Some tasks have been eliminated and some have been modified. The modifications have been made in order to more focus the project on the evaluation of public interventions which aim to influence the consumers' preferences and the firms' decisions pertaining nutritional issues. WP3 is focused on the analysis of the impacts on individual nutrient intakes of "policy-mix" which would combine public actions dedicated to improving consumer information (studied in WP1) and interventions for improving nutritional characteristics of food (studied in WP2). Considering these issues within the current proposal can give the opportunity to go further towards an **integrated approach** of public policy design and evaluation.

The elimination or modification of some tasks has resulted in a reduction in the requested budget (€550,000 instead of €600,000). The research teams involved in the project have not been changed. However, some organizational mergers have been made for situations in which two teams were involved in performing a task, but with one of the teams composed of a small number of researchers. Consequently, Met@risk has been included in UREN and CEPAL in GenIAL.

Finally, we have adopted the recommendation to invite foreign researchers in some project meetings

2 - CONTEXTE ET ETAT DE L'ART / *CONTEXT AND STATE OF THE ART* (2 pages maximum)

- Contexte et enjeux socio-économiques : Décrire le contexte économique et/ou social dans lequel se situe le projet en présentant une analyse des enjeux socio-économiques, industriels, de santé publique, environnementaux ... (arguments chiffrés).

Context and socio-economic issues at stake. The relationship between diet and chronic diseases, such as cardiovascular disease, obesity, osteoporosis and diabetes lies at the very heart of present day public health concerns (Hercberg and Tallec, 2000; INSERM, 2006). Aside from the human cost, these health problems have a high financial cost. For example, the direct and indirect costs of ischemic cardiopathy have been estimated at €5 billion per year, while medical costs attributed to obesity are thought to represent between 2% and 6% of overall health costs in developed countries (Levy et al., 1995; Oppert et Rolland-Cachera, 1998; Detournay et al., 2000)). In an attempt to better prevent these diseases, a number of actions have been undertaken or are being considered by public

authorities, both at a national and international level (e.g. WHO, 2002 and 2004; see also PNNS and PNNS2[1] in France), to promote healthy eating and adequate nutrient intakes among consumers.
- A first type of public intervention seeks to modify **food demand**, by changing food consumption behaviour and encouraging consumers to adopt a better diet. In this respect, several actions are implemented. **Information and educational campaigns**[2], either general or targeted towards specific segments of the population, are developed in many countries. The purpose of these campaigns is to increase consumer awareness in relation to the benefits and risks associated with specific food consumption practices. Other **initiatives aim to regulate nutritional claims**[3] **and improve food labelling** (currently under discussion at the European level) in order to increase the capability of consumers to make healthier food choices. For instance, nutrient profiling systems intended for consumer protection will determine which foods or categories of foods will be allowed to, or be disqualified from making nutrition or health claims.
- A second type of public intervention focuses on **food supply**. This type of initiative may be conducted in different ways. One is related to the **relative prices of food products**. In some countries (e.g. Canada[4], UK[5]...), the public authorities consider implementing taxes and/or subsidies in order to support food products recommended in a healthy diet[6]. The public authorities can also try to influence directly **the nutritional characteristics of food by imposing norms and standards.** An illustration of this type of policy would be a regulatory mechanism imposing maximum or minimum limits for a given nutrient or ingredient. A less restrictive approach would call on firms to self-regulate, for instance, the amount of sodium[7] or added sugars[8]. Likewise, the commitment charters signed by major food firms and the French public authorities in spring 2007[9], as well as the creation of an "Observatory of Food Product Quality"[10] reflect this type of initiative whose purpose it is to improve the nutritional characteristics of food products.

- Contexte et enjeux scientifiques : Préciser en particulier la position du projet par rapport à la concurrence nationale et internationale, en donnant les références nécessaires.

Through these different interventions, the growing awareness of the health issues is leading to the progressive implementation of a **public "policy-mix"**, which could ultimately be founded on a combination of actions aimed at influencing consumer information, prices and food product characteristics. The implementation of this policy, however, addresses a number of difficulties which are due in part to the uncertainty of the actual impact (both immediate and in the future) of the projected policy on dietary intake. Another difficulty is the strong disagreement between industry representatives, consumers and public health officials regarding the desirability of these actions (e.g. labelling regulations[11] and the regulation of food product supply). As these issues are being examined by a host of both national and international public decision-making bodies, it is important to determine **to what extent, and under what conditions, these interventions can effectively change dietary intake as desired from a public health point of view**. In order to contribute to the study of this question, the present research project will assemble research teams coming from different disciplines: economics, sociology, nutrition, and food engineering.
Regarding the economic analysis of the relationship between food and health, numerous studies have been conducted in the USA and in other Anglo-Saxon countries. Some of them have focused on economic determinants of pathologies linked to food consumption (see among others Cutler et al. (2003), Posner and Philipson (1999), Lakdwalla and Philipson, 2002 and 2006, Rashad et al., 2006). Other studies have dealt with the legitimacy of public intervention in this area and have analyzed the market imperfections which justify such actions (see the many studies conducted by the ERS-USDA in

[1] http://www.sante.gouv.fr/htm/pointsur/nutrition/rapport_pnns2.pdf
[2] http://www.sante.gouv.fr/htm/actu/33_050908xb.htm : « Manger moins souvent des produits gras et sucrés, c'est protéger notre santé »
[3] Règlement (CE) n° 1924/2006 du Parlement européen et du Conseil, du 20 décembre 2006, concernant les allégations nutritionnelles et de santé portant sur les denrées alimentaires.
[4] Toronto Food Policy Council (1998), Cutting out the Fat, Report N° Discussion paper #6)
[5] See for instance "Government unit 'urges fat tax'" in the UK (http://news.bbc.co.uk/1/hi/health/3502053.stm)
[6] The proposal made in France (within the scope of PNNS2 in 2006) to impose a tax on some industrial sectors in order to subsidize the consumption of fruits and vegetables, is an example of a possible corrective action.
[7] See for instance the "Salt Charter" signed in France by professionals in the bread sector.
[8] See report by the "carbohydrate working group" under the auspices of the French Ministry of Agriculture (2006).
[9] www.sante.gouv.fr/htm/pointsur/nutrition/referentiel_chartes.pdf
[10] Cf. PNNS2.
[11] See for the position of the french industry :
http://www.ania.net/ania/ressources/documents/1/7341hqQgYl08rmq7d4Zv8EKo.pdf

Washington). Research work directly addressing public policies has primarily studied the impact of taxes and subsidies on food consumption behaviours (Marshall, 2000; Kuchler et al., 2004; Jacobson and Brownell, 2000; Leicester andWindmeijer, 2003; Kim and Kawachi, 2006). However, very little research has been conducted on the regulation of food product supply on the basis of nutritional aims[12]. A few studies have assessed the impact of labelling rules on product composition or have studied the liability of firms (Coestier at al., 2005). Yet, to date, there is very little normative or empirical research available to evaluate the impact of public interventions on the product and marketing strategies of stakeholders in the food chains. This point represents a stake of major importance (see for instance, Nestlé, 2002; Caraher and Cowburn, 2005) that we want to consider in this project.

The impacts of labelling and nutritional information have been considered in a large number of papers (see Teisl and Levy (1997), Teisl et al. (2001), Loureiro et al. (2006), Nayga et al. (1998), Dirichoutis et al. (2005), and Drichoutis *et al*., (2006) for a very complete review). Indeed, the effectiveness of a nutrition strategy depends to some extent on consumers' knowledge about the nutrient content of the foods they eat. The available literature gives some conclusions about the impacts of labelling on consumers' behaviours, but as mentioned by Drichoutis *et al*. (2006) the empirical studies have been mainly made in the U.S. and there is a need for replication of research in Europe where new nutritional labelling regulations are implemented or debated. Moreover, many results are still discussed and some issues are not studied enough. For instance, further works on label formats are needed to assess the best formats that consumers will use and comprehend. More generally, there is a need of research which would allow developing and testing theoretical models related to nutritional label use and getting a better understanding of the trade-off made by the consumers between the various components involved in the consumption choices. The design of new methodologies, especially in experimental economics, is an important stake in this field.

The reception of the messages and communication campaigns dealing with health and food is another important issue which needs more investigation. In the field of sociology of communication, the diffusion of information has been deeply investigated, but sociologists have paid little attention to the use of information in practice. Research on education is mainly an Anglo-Saxon field, and generally consists of evaluating education programs (for example Kennedy 1997, Singleton 1994). A stake here is to examine in more depth the contents and the reception of health messages, and, especially, to try to understand the conditions of their implementation in new food consumption practices. Some of the gaps between reception and application of nutritional information are likely linked to social norms (XX) and social representations about health, body shape and food (xxx). These factors have to be included in new sociological and economic analyses.

Evidence of the link between diet and health (WHO-FAO, 2003) has induced many countries to design food-based dietary guidelines. However, their feasibility may be impaired by economic constraints (Darmon et al, 2005; Drewnowski et al., 2004) and by their imprecision (Ferguson et al., 2004; Lowik, 1999). Indeed, they are based on wide food categories, not on individual foods as they are actually bought by the consumers. Notably, clear recommendations on mixed dishes (plats cuisinés) are lacking. In addition, these guidelines do not help consumer to choose between two foods that have the same selling name but different nutrient contents. Nutrient profiling systems, by providing information on the nutritional quality of individual foods may limit these drawbacks (Scheidt and Daniel, 2004; Scarborough, 2007) (Drewnowski, 2005; Azais-Braesco, 2006). However the concept of nutrient profiling itself, *i.e.* the possibility to estimate the contribution of individual foods to global dietary quality, still needs to be validated.

In Food Engineering, the introduction of nutritional considerations is relatively new. There is a vast literature dedicated to food design using optimisation tools, based either on organoleptic or food safety criteria. It is well understood today that the main question is the ability of performing the compromise between different goals (cost, safety, sensory, nutrient or technological based properties). The first main question is related with the way that nutrient properties are taken into account. Looking at the models, the question is generally faced through food composition and key components are considered one by one. Until now, no works proposes a global approach where nutrient criteria are considered as a whole, whereas the new European regulation elaborated on nutrient profiling concept introduces the needs for global tools in order to study globally the impact of food based on recipe and impact of operations effects. Some concepts and tools are available (unit models for thermal or thermo dynamical operations (Bimbenet et al., 2000); step by step modelling approaches initially applied for sensory issues which can be applied for nutritional issues (Bardot and al., 1994; Clarke and al., 1998); hybrid models (Shioya et al, 1999) and numerous algorithms available, even for non-derivative models

[12] At the contrary, many works have been done to deal with food safety issues.

(Balsa canto, 2003, 1996; Banga et al, 2001; Chen et Ramaswamy, 2002)). The stake is now to be able to use relevant criteria giving a global vision of nutritional issue in the food processing. Nutrient profiling systems may be used for that. The key research question is to establish the availability of model based optimisation for the design of a method that permits to control the nutrient profile and the other properties of food performed during processing.

Beyond the stakes mentioned for each field of research, the questions raised by the nutritional and health policy issues make necessary new collaborations between these various disciplines. For instance, integrating nutrient profiles in food engineering design leads to closer interaction between nutritionists and food engineers. Assessing the nutritional cost function (needed to analyze the efficiency of policies which intend to influence firms' decisions) leads to new collaboration between economists and food engineers. Favouring such collaborations in order to better understanding how public and private interventions can influence nutrient intake is also an important stake that we want to consider in this project.

3 - OBJECTIFS DU PROJET et CARACTERE INNOVANT DU PROJECT/ *PROJECT AIMS AND INNOVATIVE ASPECTS*

(3 pages maximum)

3.1 Scientific and Socio-Economic Aims

The nutrient intakes of individuals result from their diet and the nutritional content of the food they consume. This project aims at contributing to **a better understanding of how consumers' nutrient intakes are affected by public health policies dealing with food supply and demand regulation.** Naturally, economic agents take into consideration not only the health consequences of their decisions (for the consumers) or the healthiness of their products (for the firms), but also, and respectively, the price and gustatory quality of their diets, and their commercial performances. Consequently, the main issue we want to address in this project is **how public health measures may affect the trade-offs made by consumers and firms, related to, respectively, the dietary choices and the food characteristics**. The analysis of this issue will help to **assess the effectiveness of various types of policy tools** (information, taxes, subsidies, and product standardisation) and of their combination. It will contribute to the **determination of the policies-mix which may be implemented as a function of the potentially objectives desirable from a governmental point of view** (e.g. internalising the social costs and/or modifying behaviours etc.). To this end, the present project has been divided into 3 sections:

- The first section focuses on the impacts of public measures intended to change food consumption behaviour through improved nutritional information (**WP1**). It will address two questions:

WP1a: To what extent and under what conditions can general information policies and educational campaigns targeting at-risk individuals contribute to modify consumers' behaviour? While previous works on the information and educational campaigns provide evidence of a positive impact on consumer knowledge about nutrition, they also show that a better knowledge does not necessarily result in changes in dietary practices. A possible explanation for this lack of adaptation is that food habits and norms as well as social representations of body shape may influence the application of nutritional knowledge. Hence, the present project aims at testing this argument by exploring the interactions between norms/habits/collective representations and the actual consumer health and consumption behaviours. First, sociologists will evaluate the effect of educational campaign among different segments of the population facing higher health risks: the poor, obese and/or the elderly people (**Task 1**). Another research will associate an economist and a sociologist to examine the individual representations of health, body shape and food. The homogeneity of representations between members of social groups will be studied to know if collective representations *may* have a normative power and, if so, for which social groups (**Task 2**). Identifying the sociological obstacles to information-driven changes requires that the true effect of social interactions be quantitatively identified, since homogeneity of representations may also result from common environmental characteristics (*e.g.* same food prices, same information set etc.). Hence, we will propose an econometric evaluation of the nature of within-group correlations in behaviours and representation in order to assess whether they result from norm effects, or are just correlations driven by unobservable common factors (**Task 3**).

WP1b: To what extent, and under what conditions, nutritional labelling and claims contribute to more healthy food consumption behaviours? The effectiveness of a nutrition strategy depends to some extent on consumers knowing or being able to find out about the nutrient content of the foods they eat.

For this reason, food information programs are becoming increasingly popular as a tool to help consumers select a healthy diet and is used at national level in many countries. The present project will deal with the impacts of nutritional information on consumer choice when buying or consuming food products. More precisely, we aim to address the question of how people make decisions when facing nutritional information used as a normative regulatory tool. Insight must be gained into which types of label for nutritional information and what formats perform best in terms of ease of understanding as well as expected ease of use, and into the strength and weaknesses of each execution (**Task 4**). An approach, using both sociological and epidemiological tools, will combine an individual and a population approach in order to study consumer decisions in a context of increased nutritional information and labelling

Another issue we want to consider is related to the nutritional and health claims, recently regulated by the European Union[13]. Initially we will focus on the purchasing behaviour of households concerning "health foods". "Health foods" include a wide range of products, especially "light" and fat-free products, "food medicines", and meal substitutes. The objective of this study will be to examine the socio-demographic characteristics of the households buying such products (e.g. income, age, family size) and to assess whether "health food" products match with good nutritionist practices, for instance concerning fruit and vegetable consumption (**Task 5**). Another study will examine to what extent health food products are able to reach the targeted consumers, i.e. those with the highest health risks. An assessment will be made of the possible correlation between being overweight and consuming food products marketed with nutritional and health claims (**Task 6**). Finally, we will characterize the demand related to health by analyzing the nutrients demand. Indeed, with a growing concern on health issues, food can be viewed as an health input, and the consumer may value its nutritional content more than traditional aspects. The estimation of nutrient (and not food) elasticities will give insights on the relevance of such a type of information for the consumer or on the accuracy of modifying the product composition to improve its nutritional quality. (**task 7)**

• The second section of the present project will deal with the **public measures undertaken in order to influence firms' decisions related to characteristics of marketed products** (**WP2**). Two questions will be addressed.

WP2a: What is the room for manoeuvre which firms have in terms of nutritional improvement of foods, especially for the cheapest products? In order to assess the impact of the public initiatives, it is necessary to know the real room for manoeuvre which firms have for improving nutritional characteristics of food products marketed. If the room for manoeuvre is tight for technological (unfeasible process), economic (too high additional costs), or commercial (sensory changes) reasons, the scope of action enjoyed by the public authorities on food supply will necessarily be limited. As a result, initial research work will study the room for manoeuvre available to firms in order to nutritionally improve food products given the limitations they must face concerning technical feasibility, sensory characteristics and cost. An innovative feature of this study is that it will associate nutritionists, and specialists in food engineering and industrial organization. Consideration of nutritional aspects in the decision-making process of firms presupposes that it is possible to more or less concisely assess the nutritional quality of a food product. The purpose of initial research will therefore seek to validate the notion itself of a nutritional profile and the resulting hypothesis that it is possible to categorize food products according to their ability to favour (i) an overall balanced diet and (ii) compliance to dietary recommendations (**Task 1**). Subsequently, a validated nutritional profiling system will serve to study the room for manoeuvre from a technological standpoint in order to ensure a compromise between the nutritional improvement of food products, cost control and taste characteristics (**Task 2**). All research conducted in relation to WP2a will focus on convenience foods "plats cuisines", and the analysis of the conditions necessary for the improvement of the nutritional quality of low-cost segment food products.

WP2b. To what extent, and with what impacts, the nutritional characteristics of foods can be improved by firms, voluntarily or under public constraints? Research work conducted here by industrial economists will aim to assess the compared effectiveness of different public tools to influence food product prices and/or characteristics. This work will examine the conditions under which firms may alter production (product characteristics) and marketing (product ranges and prices) decisions in such a way as to favourably respond to public health needs. A first task will be devoted to descriptive analyses of firms (**Task 1**). The goal will be to identify and understand the role of the nutritional issue in the product differentiation and the competitive position of firms, in relation to the characteristics of the sectors (degree of concentration, brands power...). On this basis, the effectiveness of measures which are based on "voluntary agreements" between manufacturers and public authorities will be studied. These measures, promoted by the PNN2 program and the French ministries of Heath and

[13] Règlement (CE) n° 1924/2006.

Agriculture try to promote a new partnership between the public and the private sectors (**Task 2**). Finally, a particular focus will be given to the impact of taxation and standardisation on decisions made by manufacturers (**Task 3**). The collaboration with WP2a will aim to characterize a nutritional cost function to integrate in the economic analysis and to assess the public regulation impacts on the nutrient content compromise in food processing.

• The third section will propose an **experimental study of the individual impact on daily food behaviours generated by various policy-mix (WP3).** We will address the following question: What balance should be encouraged between measures related to information, prices and product characteristics, in order to contribute to the adoption of healthier individual nutrient intake? As it is clearly impossible to observe the combined effects of different policies – some of which are not even implemented at present – on individual nutrient intakes, we have chosen to adopt an experimental approach. The work will consist of creating and using an experimental device that allows a global examination of a food policy impact on behaviours. The work will be based on a tight collaboration between economists and nutritionists. It will also include an exploratory section with the introduction of experimental psychology and neuroeconomics. The goal is to make possible the observation of the behaviour changes (i) generated by the policy relating to the "whole-day consumption" of products and (ii) when food policy consists of concomitant price variations, product modifications and information manipulation by the means of food labels. The objective is to know whether these components are **complementary or substitute**, and in particular whether **the combination of policies is beneficial or at the contrary generates undesired effects**. A first task will be devoted to the design of an experimental device to observe the impact of a given policy on a change in individual nutrient intake (**WP3a**). Since now, the research in food behaviours has been interested in the explanatory variables of food behaviours. We intend to concentrate here on the behaviours changes related to alteration of the explanatory variables following an implicit or explicit policy. By using this experimental device, it will be possible to assess the impact of some public policies on individual nutrient intakes and the resulting combined effect of price, information and product characteristics modification (**WP3b**).

- Finally, the general issue we want to address in this project will suppose to establish tight links between the WPs. The role of each of them is shown in Figure 1. The interactions will be conducted in order to design and evaluate policy-mix scenarios: given the range of food modifications (in prices and nutritional characteristics) which can be expected from firms, voluntarily or under public constraints (WP2), given the range of nutritional information policy supports and their expected impacts on food behaviours (WP1), which policy-mix scenarios have to be considered? What can be the impacts of such policy-mix scenarios on individual intakes (WP3)?

3.2 Originality and Innovative Aspects of the Project

Whole project: (i) considering public interventions on both firms and consumers in order to contribute to the definition of an integrated food policy, **(ii)** contributing to the design of policies-mix scenarios and the assessment of their impacts on individual nutrient intakes, **(iii)** favouring exchanges between disciplines in relation to major interface issues (*e.g*; how can considerations related to nutrition be included in the assessment of the room for manoeuvre in food processing?).

WP1a: understanding the impact of norms and social representations on the implementation of nutritional and educational information aimed at encouraging new food product consumption practices and prevention. **WP1b**: assessing the possible contribution of product related information (labelling and nutritional/health claims) to the adoption of consumption behaviours which take into account the health benefits and risks. **WP2a**: assessing and validating a nutritional profiling system and including it in a methodology for the creation of food products (formulation and manufacturing processes); analyzing the compromises between technological, economic, nutritional and sensory dimensions in food formulation. **WP2b**: assessing the effects of public interventions (taxation, standardisation, and voluntary agreements) on production and marketing decisions of firms. **WP3**: designing and validating an original economic experimental device to evaluate the impact of public interventions; applying this device to the assessment of the impacts on nutritional intakes of information, price and food characteristics modifications.

3.3 Key Points (Verrous)

The key points on which the methodological innovations condition the response to the issues raised in this project are as follow: The validation of a nutritional profiling system to be used to evaluate the nutritional quality of a food product (**WP2a**); The inclusion of nutritional considerations in the formalization of the decision-making process for industrial manufacturing (**WP2a**); The design and validation of an experimental economic device for the assessment of the impact of public interventions (**WP3**).

3.4 Meeting the Requirements of the Call for Projects

All of the research work proposed in this project is driven by an objective which is clearly related to **area 6**. Based on social sciences, the present project aims to contribute to the definition and assessment of public food product policies in relation to health issues, and to analyze their impacts on the decisions made by consumers and firms. Among the possible public policy interventions, this project will focus on actions concerning food product characteristics, via taxation or product standardization. In some proposed tasks, the stress which has been placed on the behaviour of underprivileged populations, as well as the tasks' stated aim to work on the nutritional improvement of low-priced convenience foods, addresses the concerns put forward in the call for projects. The concern about having an integrated approach to food-related issues has resulted in combining research dealing with consumption practices, and economic constraints faced by firms. Some of the proposed research work is related to **area 1**. Seeking to understand the gap between the knowledge acquired by consumers and their real consumption behaviour lies at the very core of some of the proposed tasks. Also studied are the combined effects of information-related actions, and the effects of price and food product characteristics. Other research work is related to **areas 3 and** 4. The research into food manufacturing technologies (formulation and processes) therefore aims to propose new methodologies to study the choice between nutritional, sensory and economic criteria. In this respect, we feel that the proposal to work on convenience foods is justified, even though this type of food product is not included in the suggested list of topics in the Call for Projects, because of its characteristics and the market share it represents.

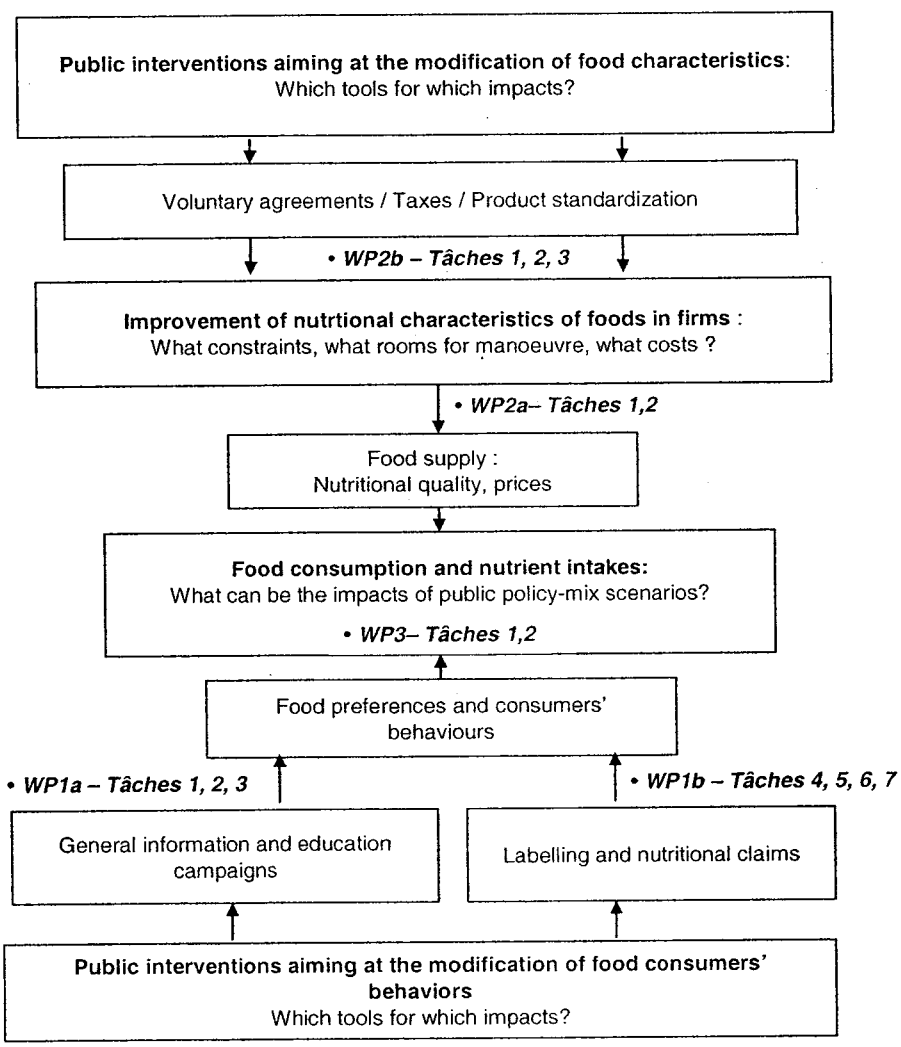


Figure 1

4 - ORGANISATION DU PROJET / *TECHNICAL DESCRIPTION AND PROJECT ROADMAP*

(10 pages maximum, hors publications et fiches descriptives des équipes)

Décrire le programme de travail prévu en identifiant pour chaque étape ou chaque tâche, en réponse aux objectifs poursuivis, les méthodes et moyens scientifiques et techniques mis en œuvre, en explicitant le rôle de chaque partenaire. La valeur ajoutée des coopérations entre les différentes équipes sera argumentée. Le mode de pilotage du projet sera décrit en tenant compte des alea susceptibles d'être rencontrés.

Le plan indicatif est le suivant :

Programme des travaux

Description des travaux (préciser le détail de chaque étape de travail, work package ainsi que leur durée)

Méthodes mises en œuvre et résultats attendus

Faisabilité, risques d'échecs et de blocages

Méthodologie de validation des résultats et calendrier (faire apparaître les étapes clés telles que la validation d'hypothèses, l'évaluation de la méthodologie...). L'évaluation au cours du projet sera basée sur ces étapes-clé

Si nécessaire, mobilisation des infrastructures (sites d'appui, durées d'utilisation, évaluation des coûts)

Répartition du programme des travaux

Savoir faire des équipes

Organisation du partenariat et pilotage du projet

Raisons du choix des partenaires ; objectifs particuliers de chacun des partenaires (insertion dans la stratégie globale de recherche et développement,...) ;

Répartition des tâches entre les partenaires et délivrables aux différentes étapes

Valeur ajoutée de la coopération

Modalités précises de la gestion de projet.

Fiche descriptive des équipes (voir modèle joint)

Tableau synthétique des tâches (voir modèle ci- joint)

4.1. Technical description of work. We describe below each WP and Task within the global project shown in Figure 1. Detailed work planning of each task is presented in the "Deliverable and milestones" form. Task and WP durations are sum up in the Gantt diagram.

WP1: NUTRITIONAL INFORMATION POLICIES AND FOOD BEHAVIOURS

WP1A : Education, norms and social representations, preventive behaviors

Task 1: Impact of nutritional education campaigns on at-risk populations (CORELA). Acquiring and possessing nutritional information and knowledge does not imply its application or the implementation of food recommendations in daily practices. Under which conditions can nutritional knowledge pertaining to prevention or weight control be the subject of appropriation and experimentation by the populations targeted by information and educational campaigns? The work proposed in the present project will seek to answer this question by taking in account two significant points. First of all, a change in food practices is probably conditioned by an accumulation of social handicaps and social bonds (loneliness/solidarity) which can, according to each individual case, facilitate or slow down the integration of information in daily food practices. In addition, the acquisition of knowledge depends on the types of standards, norms (what is good for one's health *vs.* what is risky, pathologies *vs.* a " normal " state of health) and the forms of subjectivity of the individuals. The appropriation of nutritional knowledge can come up against a major obstacle, i.e. the impossibility of individuals to give up their beliefs, often contradicted by current scientific nutritional knowledge.

Method. To understand to what extent these elements may impact a possible change in food behaviours, we will study three types of actions. The first one is related to the communication of recommendations and food regulations prepared by the PNNS for the elderly. Its first stage will deal with (i) the organisational forms and conditions of this communication on a local scale and (ii) the training about food issues for professionals intervening in homes. The second stage will focus on the reception of the nutritional messages by the elderly themselves. On the basis of a qualitative study of elderly people (approximately sixty subjects), this stage will analyse the forms of reception of the

messages and the potential changes in food practices (food purchase, preparation of meals and consumption). We aim to understand how the reception of nutritional messages is related to the life conditions of the elderly and their food. A second study will aim to analyse the specificity of food practices in precarious situations. We are particularly interested in the difficulties of following food recommendations and daily hygiene practices (the purchase of food products, the conditions under which meals are prepared, and the eating of regular and balanced meals) in environments marked by strong inequalities and situations of social conflict. In particular, we will study both family and social support, or the level of integration in mutual aid networks which are likely to worsen or - on the contrary - to mitigate the effects of the inequalities on the social conflict and health. This research will be based on a qualitative study of 50 people who have recently lost their jobs and will study the changes and the adaptations to these situations of conflict and stress. Finally, we will study the conditions related to the appropriation of nutritional knowledge concerning weight control and the prevention or the treatment of obesity. On the basis of a significant corpus of 80 interviews, we will examine how seemingly inconsistent practices which logically lead to obesity can make sense. Among many obese people, an in-depth knowledge of basic nutritional principles coexists with the impossibility to implement them: information is in fact not integrated but simply applied on occasion. Two opposite attitudes will then have to be understood: experimentation and acquisition of a nutritional knowledge on the one hand, and the application of principles which are never transformed into knowledge on the other hand. This work will be undertaken through a precise analysis of the data generated by the interviews: qualitative and quantitative analyses using textual analysis software.

Expected results. Identification of conditions under which nutritional knowledge can be the subject of appropriation and experimentation by the populations targeted by information and educational campaigns. Environmental conditions (family and social support, messages supports...) which are likely to accentuate / mitigate the effects of the inequalities on the social ruptures and health.

Task 2. Food and Health: analysing preventive behaviours (CORELA)

This task aims at identifying some sociological and economic factors that may affect the relationships between health, information, and food habits. More precisely, we will ask whether the individual representations of health, body and food are homogeneous within social groups. Do collective representations still exist? How are they structured? What can be said about their normative power? How far do they contradict dietary norms? Last, we want to examine the extent to which food habits are considered by consumers as an element of health prevention.

Method and data. This task will associate ethnographic and statistical methods. We will apply latent class techniques to four surveys on food habits and/or nutritional knowledge and/or health and/or health-related behaviours: "*Enquête Permanente sur les Conditions de Vie des ménages*" (EPCV, INSEE, 2001 ; n= 5113 adults), "*enquête Individuelle Nationale de Consommation Alimentaire*" (INCA, AFSSA, 1999 ; n= 1985 adults), the household expenditure survey SECODIP (TNS-SECODIP, 1999-2003 ; n#8000 households) and the "*Enquête décennale sur la santé et les soins médicaux*" (Santé 2003, INSEE, 2002-2003, n=35000 adults). We want to test whether a set of socioeconomic indicators (including the marital status and the household structure) correlate similarly with (1) health-related behaviours; (2) representations of health and body (3) food habits (4) nutritional knowledge. This statistical work will be completed by an ethnographic research in order to gain qualitative insight into the representations of health and food habits that prevail in two deprived areas (one in Ile-de-France and the other in Nord-pas-de-Calais). This is of major importance, as food-related diseases are more prevalent in these areas. The methodological interest of our approach lies in the conceptual complementarity between sociology and economics: we will be able to control how representative are the qualitative results, and to feed back the statistical analysis with assumptions derived from the interviews.

Expected results. The economic literature has focussed mainly on the identification of causal information effects on nutrient intakes, food consumption or health [see inter alia Kenkel 1991, Variyam et al. 1998, Nayga 2000, Kim et al. 2000, Etilé 2005a and 2005b]. The potential social gradient in information effects has been generally ignored. Sociological evidence on food habits, norms and health knowledge, and primary health prevention is scarce, although there are some works on obesity [Poulain 2002b, Lhuissier et Régnier 2005] or health education applied to food [Augor et Lhuissier 2006, Berlivet 2004]. We expect to have new results on the causes of the gap between medical dietary norms and food habits, especially those of poorer households, and to identify the social groups wherein there are homogenous representations of health, body and health production. This will therefore provide us with some suggestive evidence about the existence of conflicting norms.

Task 3. Information, social interactions and the consumer's weight control problem (CORELA)

Task 2 identifies potential normative effects by assuming that the homogeneity of individual representations is a necessary condition for the presence of effective social norms. But this is not a

sufficient condition, and Task 3 will show how to address this issue. Testing for a norm-based explanation requires indeed that social interactions (SI) in the consumer's weight control problem be identified. This task will focus on a particular type of SI called preference interactions, whereby individual tastes regarding body shape or food behaviours depend on others' body shapes and food choices (Manski, 2000). Identifying SI effect is of major importance also because SI produce social multiplier effects : if information policies have a direct effect on individual behaviours and if there are preference interactions, individual preferences will also change, and so will in turn and again individual behaviours: this second, indirect, effect represents the social multiplier of information policies. To our knowledge, a small numbers of econometric papers have already begun to investigate SI issues (see, for a review, Etilé, 2007).

Method and data. The research will be based on a general model of preference interactions (the "gravity model", see Brock and Durlauf, 2000). Its main assumption is that individual well-being is negatively affected by the distance between one's own behaviour (body shape or food choice) and some prescriptions (in the sociological sense of social norms) that are specific to the one's reference-group. Hence, we can assess the importance of preference interactions by identifying the effect of prescriptions either on behaviours or on well-being. Prescriptions are usually measured by the mean or median behaviour in the reference-group, which gives rise to important identification problems in applied works: when a prescription depends on each group member's behaviour, it is likely to be endogenous. This is the "reflection problem" emphasised by Manski (1993). Hence, we will have to use instrumental variable techniques (see, for an application, Etilé, 2007).

Given the objective of the task, appropriate French data sets were not available. Hence, we will focus on methodological questions relating to the identification of SI effects. For the empirical applications, we will use two unusually rich datasets: the British Household Panel Survey (BHPS) and the National Longitudinal Study of Adolescent Health (Add Health). The BHPS is an annual panel of roughly 10 000 individuals in around 5 000 different households in Great Britain. The wave 14 contains detailed information about the weight and height of all adult members in each household. Add Health is a panel dataset on American youths, interviewed in 132 schools in 1994, 1995, 1996 and 2003. It covers health and related behaviours of those teenagers who were in school at between the 7th and the 12th grades in 1994. It also contains interesting information on teenagers' environment, food behaviours and social network. One major advantage of both these datasets is that they relate to countries with high prevalence of overweight.

Expected results. Using the BHPS, a first work will test whether there are social status comparisons regarding body shape. In brief, is my well-being or my BMI affected by the mean or median BMI of individuals with higher social status? Here, the reference-group is made up of individuals with higher but close social status. Using Add Health, we will examine whether teenagers' BMI and well-being is affected by their peer BMI and/or by their peer food behaviours. Here, we will present results for various peer groups: same-sex individuals in the same school, the same year, at a higher grade or the same grade, with the same pubescent status and, last, same-sex friends. In both studies, the alternative hypothesis is that individuals' behaviours seem to be influenced by their reference-groups only because they share some common unobservable characteristics or face similar environmental variables (information for instance). In this case, there is no social multiplier.

WP1B. Labelling, claims and nutritional characteristics of food : what impacts on consumption behaviours ?

Task 4. Nutritional labelling and food consumption decisions (UREN and Met@risk). New labelling systems have been developed in several countries to make it easier for consumers to choose a healthy diet by providing at a glance information about the nutritional content of foods. Although, it seems that consumers are able to interpret these type of logo's meaning accurately (Smith et al., 2002), there is little literature on consumer acceptability and understanding according to the label formats (Drichoutis et al., 2006). In addition, only a few studies examined possible differences according to individual determinants such as socio-demographic, food behaviour or nutritional state (Larsson & Lissner, 1996; Kristal et al., 1998). The goal here is to tackle the question of how people take decisions when facing nutritional information used as a normative regulatory tool. This task will study consumers' decisions in a context of increased nutritional information and labelling. Insight must be gained into which type of logos for nutritional information performs best in terms of ease of understanding as well as expected ease of use and into the strength and weaknesses of each execution. This approach presents to originality to combine an individual and population approach using both sociological and epidemiological tools. The accessibility to a well phenotyped cohort is particularly interesting as it allows identifying variables susceptible to influence perception and understanding of the nutritional information i.e. socio-demographic (age, gender, marital status,

diploma, socio-professional categories, urban or rural localisation), food behaviour (typology, adequacy to the recommendations) and nutritional status (normal, overweight or obese).

Methods. This work package will combine tools from economics, sociology and nutrition. We will analyze decision-making of consumers depending of both nature of information and types of labelling. We will analyse the understanding of different types of labelling as minimal *vs* complete nutritional information, label, recommendations and health programs logos e.g. traffic light. For that purpose, we will use three complementary methodologies

i) A questionnaire including a packaging with different types of labelling will be sent to all the subjects of the cohort SU.VIMAX (4000 individuals older than 50 years old). Perception and understanding of the different systems will be tested according to socio-demographic, food behaviour and nutritional status variables. An econometric analysis will allow assessing consumers' demand for food labels.

ii) Among the global cohort, 100 in depth interviews will be done. The subjects will have to describe and comment on products with different type of labelling shown to them. They will explicit how these different labelling could help their decision-making of food consumption.

iii) Among these 100 individuals, we will implement two focus groups (of 12 persons each one) that will allow a very qualitative approach based on interaction between participants concerning the understanding of the different means of labelling.

Expected results. Results of this study can have important implication in term of public health as it will contribute to identify and propose adequate tools for consumer choice of food products. Various programmes used in different countries will be tested and their perception and understanding by sub-groups of the population will therefore be compared. The results will help to understand and improve the labelling policy for informing about risks and benefits coming from food.

Task 5: Nutritional claims: how will they help to follow nutritional recommendations? (GREMAQ-INRA). Many papers have investigated the relationship between consumption and obesity. Among others, Auld and Powell (2006), McInnis & Rausser (2005)) are interested in the impact of ready-made meals and fast food products on teenagers. A few works have investigated the consumption of "health foods". "Health foods" include a wide range of products, especially "food medicines", organic and fat-free products and meal substitutes. But, are such products a good response to nutritional concerns?

In this research focused on the purchasing behaviour of households concerning *"health foods"*, we aim firstly to give a demographic description of the households that are used to buying such products (income, age, family size...) and secondly, to identify whether the "health food" products reflect good nutritional practices, for instance, concerning fruit and vegetables or soft-drinks. In particular, we want to identify whether the consumption of health foods leads to substitution and compensation between products which can be negative from a health point of view.

Method. Discrete Choice Models are useful for measuring the impact of certain product characteristics on purchase probability, such as the presence or absence of a quality label, a famous brand or a store brand. More precisely, theses models can calculate the consumer's willingness to pay for such characteristics. Nevertheless, if data are related to real purchases, which is an advantage compared to simulated data (experimental economics), the variability of these data may be low. For example, this is true regarding prices, especially if only one distribution channel is considered (e.g. mass distribution). This feature involves a price disutility measurement which has no strong meaning. To overcome this difficulty, recent advances in Discrete Choice models consider choices where customers may buy more than one kind of product. This approach identifies consumer behaviours which are not related to just one product (Seetharaman et al., (2005); Singh et al., (2005)). We will apply this methodology to health food analysis, by using consumption data of French households (SECODIP).

Expected results. Some studies into food consumption practices (see CREDOC, 2004) related to health concerns suggest that health food consumption is correlated with good nutritional practices. This would mean that, regardless of their objective effect on health, health food products are consistent with public nutritional recommendations. As a result of their attractiveness, to a certain extent they would enhance consumers' awareness about food practices. The aim of this research is to check whether this assumption may be confirmed through observations based on real purchases, for every category of product and all socio-economic profiles.

Task 6 : Nutritional product characteristics and health risks (CORELA). The willingness to pay for nutritional characteristics has been measured for several products in other countries (cf. *inter alia*, Maynard and Franklin, 2003, Asselin, 2005, Teratanavat and Hooker, 2006, Beatty, 2007). To our knowledge, this literature has not investigated the impact of health status on the choice of nutritional characteristics. A closely related question is whether the choice of "light" products is a curative or a preventive decision.

Method and data. We will focus on the French market for cottage cheeses, because it is a mature market with easily identifiable varieties. We will use household expenditure data from the panel TNS-Secodip 2003-2004. Information on household members' BMI in 2003 will be used to profile households according to the number of overweight individuals and whether these are adults or children, meal planner or not, men or women. The cottage cheese characteristics that will be retained are (*a priori*) the brand, the fat content and the packaging. Household choices in 2004 will be then modelled as a function of the product characteristics, a number of household variables – especially income -, and the BMI profile. We will particularly take care of the cross effects of income and BMI. The structural parameters of preference will be estimated via a mixed multinomial logit model (Train et McFadden, 2003).

Expected results. This case study will yield results on the willingness-to-pay for the "light" characteristic for various types of household. We want particularly test whether those households who are the more at risk for obesity-related morbidity are also those who value the most "light" products. If this is not the case, then favouring the supply of such products can not be part of an efficient policy-mix.

Task 7. Food or Nutrition: Sensitivity of consumers to nutritional content (CORELA).

Is food consumption driven by a demand for nutriments? With a growing concern on health issues, food can be viewed as an health input, and the consumer may value its nutritional content more than traditional aspects. In this framework, nutrient elasticities may be the right tool to design food and nutrition policies. In particular the estimation of nutrient (and not food) elasticities gives information on the relevance of such a type of information for the consumer or on the accuracy of modifying the product composition to improve its nutritional quality. In terms of methodology, this is the only task of the project where consumption is modelled in terms of quantities, and not in terms of choice of variety. A main issue is that nutrients are not directly available in the market. Till now a structural approach has not been fully developed and implemented to model the demand for characteristics of food products. In the literature, nutrient elasticities are calculated in several ways. The first one uses reduced forms and direct measurements of elasticities may be obtained through a regression of nutrient intake on relevant variables ((Bouis and Haddad 1992). As the design of a nutritional policy requires all foods to be considered, in order to account for substitutions and complementarities between products with different nutrient attributes, estimation of a complete demand system is necessary. The second approach is an indirect approach. It consists in estimating a structural model of demand for food and to use the results to evaluate demand for nutrients, through the application of a conversion matrix between elasticities (Huang 1996).

Method and data. An alternative approach is to apply to nutrients Rosen's structural model (1974). The first step consists in estimating a hedonic price function to obtain an estimate of the implicit price, regressing the prices of food products on their content in nutrients. With a non-linear specification for the hedonic price function, each implicit price will be different for each household since it will be a function of quantities of consumed nutrients. In the second step, these prices are those that are used to estimate the demand for nutrients. There are important methodological issues: here price endogeneity leads to identification problems. They will not be considered using the traditional IV approach but the recent work by Ekeland, Heckman and Nesheim (2004) and Bajari and Benkard (2005). A database combining food purchases from TNS data and a nutritional matrix has been initiated at Corela, with the collaboration of nutritionists. These data will be updated and provide a basis for estimation of a characteristic demand system.

Expected results. They will focus on 2 dimensions: the disparities between elasticities for food products and for nutrients as food characteristics; the different impact of socioeconomic variables in both settings, in order to derive implications for food and nutrition policies design on different socio-economic groups.

WP2. FOOD CHARACTERISTICS MODIFICATIONS BY FIRMS, VOLUNTARILIY OR UNDER PUBLIC CONSTRAINTS

WP2A. Taking into account nutrient profiling in food processing design: application to convenience foods

Task 1. Nutrient profiles as indicators of the contribution of each food to the nutritional quality of diets: validation by a modelling approach (U. Médecine Marseille).

The concept of nutrient profiling has been proposed by the European Commission for a regulation on nutrition and health claims (1). It is aimed at classifying individual foods according to their contribution to a healthy diet. However, this concept has been criticized because the contribution of each individual food to nutrient intakes, and therefore dietary quality, is highly variable and is often limited (2). Many

nutrient profiling systems have been proposed, and their conclusions on the nutritional quality of individual foods are generally well correlated both together and with the opinion of nutrition experts (3;4). However, the concept of nutrient profile itself still needs to be validated. Therefore, the present task will be aimed at testing the ability of nutrient profiles to discriminate foods according to their contribution to nutrient adequacy of diets.

Methods. The principle is to design nutritionally adequate diets by a diet modelling approach, to estimate the probability of individual foods to be included in these optimal diets, and to test whether a given nutrient profile system is able to predict such a probability:

- Diet modelling will be based on operational research (5). In particular we will use a goal-programming method (6) that we are currently adapting to the modelling of individual diets (PhD thesis in progress). This technique allows, for each individual diet observed in a dietary survey, to design an optimal diet fulfilling a whole set of nutritional recommendations (the French ANC and/or BNM will be used), and resembling the most to the observed diet.
- The nutrient profiling approach tested will be the recently described "Sain-Lim" system (7-9), which is currently under evaluation by French nutrition professionals. This system is originally based on two scores, namely the SAIN and the LIM, which respectively provide information on the healthy and unhealthy aspects of each food. The SAIN is a nutrient density score which estimates the mean percent coverage of the French recommendations for 15 essential nutrients by 100 kcal of each food. The LIM estimates the mean percent of maximal recommended values for added sugar, saturated fats and sodium per 100g of each food. Application of thresholds allows the definition of 4 food categories: healthy (high Sain, low Lim), intermediate (high Sain, high Lim), unhealthy (low Sain, high Lim) and neutral (low Sain, low Lim).
- Multivariate analysis, in particular logistic regression, will be used to estimate the probability, for a given food, to be included, or not, in the optimal diets. Each food will be allocated to one of 4 categories according to whether they are in average increased, decreased, kept in equal quantity, or newly added in the optimized diets compared to the observed diets and these categories will be compared to the Sain-Lim categories, to explore the ability of this system to discriminate foods according to their contribution to optimal diets and the feasibility of nutritional recommendations.

Expected results. By analyzing the compatibility and coherence between nutrient-based recommendations and recommendations on individual foods, this work will participate in the validation of the nutrient profile concept itself. Moreover, it will provide a rigorous method to compare different nutrient profiling systems in their ability to discriminate foods according to their contribution to a nutritionally adequate, healthy, diet. Dietary data from the French INCA2 individual food consumption survey will be used.

Task 2. Food Nutritional optimal design under sensory and economical constraints (GENIAL, CEPAL et U. Médecine Marseille).

Classically, the design of food (recipe and definition of operating conditions) is performed on a sensory basis. Economical considerations are introduced after the definition of the product goal. Numerous optimal approaches are used, mainly based on modelling, even if the definition of the best compromise between all the possible recipe- process definitions is not obvious. Introduction of new nutritional objectives is difficult to take into account. The understanding of the freedom degrees that are useful for this task is not simple, and on the other way, the performing of the nutritional objective is not necessarily possible considering the process in itself. The concept of nutrient profiling is new, and it is an interesting stake to establish methods that are able to manage such new criteria, in order to define the best related operating conditions and the recipe for the product. The task concerns the design of a methodology able to permit the study of the possible processing conditions (including formulation of the recipe), that allows to respect the nutrient profiling approach, under constraints that are necessary for sensory and cost considerations.

Methods. The approach is based on modelling and non-linear optimisation tools. The key consideration concerns the definition of the product. Several spaces have to be considered. The nutritional one, that is based on the nutrient profiling chosen approach (Sain/lim space), the sensory space, that is define by a set of descriptor, the economical space, that is based on cost calculation based on cost of ingredient, and cost of processing. After the definition of the characterisation space of the product (technological and sanitary constraints will be probably neglected), a model will be established. The key approach for the model is to relate the chosen nutrient profiling approach with recipe and operating conditions. Depending the product (see Work plan), the model will be easily establish from previous works, or based on experimental studies. Kinetic and dynamic approaches were used. Based on previous works dedicated to sensory modelling approaches ((Bardot et al., 1994) a step by step improved models will be establish in order to minimise the number and cost of necessary experiments. Having a reliable model, the non-linear optimisation will be done. Definition of

mathematical criteria is performed, taking into account, different situations for the objective (optimisation of nutrient profile or optimisation of cost, considering constraints for the nutrient profile). Non-linear dynamic optimization tools were used (Olmos et al., 2004).

Expected results. In a first step, **a** « virtual » food is chosen, and 3 unit operations are used. The choice of unit operation is based on previous works performed in our team, and existing models (dehydration Impregnation soaking process (because it is a direct formulation operation), thermal processing, like baking, and frying because frying is a complicated formulation and thermal processing operation). The goal is to establish, that it is possible to design a model of product –process able to simulate the dynamic evolution of nutrient profiling chosen approach. Optimization, only on a numerical way will be performed on each case. In a second step, based on previous results, a real case will be studied. The choice is a composite food, like quiche or « plat cuisiné ». The interest of such composite product is that it is a whole diet, first and second only a small number of published studies are available. A thermal processing operation will be studied. Based on experiments, step-by-step incremented models will be applied. The same nutrient profiling approach as is task 1 and step 1-task 2 is used. Sensory definition (based on flash profile methods) were used it establish the dimension and characterization of the product sensory space. The principle of optimization establish in step 1 will be used. In a third step, the goal of optimization will be to minimize the cost, considering sensory and nutrition criteria as close as possible with an existing target.

WP2b: Industrial strategies and public regulation of nutritional characteristics

How do public policies concerning food characteristics affect the strategic behaviour of firms in the food chain, and how do they affect the risks associated with deficient nutritional intake? The objective of WP2b is to investigate these issues using quantitative economics. This WP will begin with a descriptive analysis of the strategies used by processors and retailers (**Task 1).** Then the efficiency of alternative public policies will be analyzed in terms of their ability to reduce the negative impacts of deficient nutritional intakes **(Task 2 and 3).**

Task 1. Descriptive analysis of the strategic behaviour of firms (INRA-LORIA). What are the possibilities for firms to improve the nutritional quality of the marketed products, especially those in the lower price segments? What implications does such an improvement have on product differentiation and market segmentation? The answers presumably depend on the type of firm and the sector. In this task, we will conduct a descriptive study of various marketing strategies related to nutritional issues. We will assess the possibilities of modifying food products by taking into account i) the acceptance of consumers for this type of products and ii) the competitive effect on the markets. The possibilities of engaging companies in improving the nutritional quality of their products and in increasing consumption of healthier products will be evaluated.

Method. Several (3-4) sectors will be chosen in order to comprise different industrial contexts in terms of the degree of concentration, the market shares of national brands and private labels, types of vertical relationships etc. One of these will be the sector examined ("plats cuisines", convenience foods) in WP2a. Three or four firms in each industrial sector and 2-3 firms in the retailing sector will be selected for analysis. Surveys and data analysis (SECODIP, MINTEL) will be used to analyse the firms.

Expected results. In collaboration with WP2a, we will assess the possibilities for firms, in the selected sectors, to take private initiatives in order to improve the nutritional quality of food products. We will examine how such initiatives may affect product differentiation and market segmentation. We will Innes, R. (2004). Enforcement costs, optimal sanctions and the choice between ex-post liability and particularly focus on nutritional improvements of products in the lower price segments.

Task 2. Efficiency of voluntary agreements (INRA-LORIA). Following the French program for Nutrition and Health (PNNS2) launched in 2006, public authorities experiment a new partnership with industrial firms in the food sector. The goal is to promote "voluntary agreements" between public and private sectors in order to improve the nutritional quality. The idea is to reward firms that commit to reducing the amount of sugar, fat and/or salt by modifying products and/or product lines. This is achieved by governmental certification of a firm-specific commitment which includes a general label to be communicated to consumers. Several firms, including large producers such as Danone, Coca-Cola, Unilever and Carrefour, have already chosen to sign such contracts. In the light of this development it is important to examine the effects of these kinds of voluntary agreements. How and under what conditions is the nutritional quality of foods and the supply affected? Does this kind of voluntary agreements positively contribute to public health goals? These questions will be examined by analyzing the strategic behaviour of firms using theories of industrial organization. Two approaches will be combined: First, we will thoroughly analyze the contents of the contracts already signed. We will then assess the nature of the commitments made and determine the possible effects on food characteristics. Secondly, based on the main features identified in the first step an economic model

will be designed in order to assess the efficiency of the commitments. The theoretical background will be based on the existing literature on voluntary agreements concerning environmental regulation (*see* Alberini and Segerson, K. (2002), Arora and Gangopadhyay (1995), Lyon and Maxwell (2003)). Considering the issues raised by nutritional policies, we will propose a model to compare two main strategies: purely private standards and adherence to voluntary public regulations. A private standard is a strategy of relaxing competition through innovation and differentiation. It can also be viewed as a strategy motivated by the possibility of influencing ex-post public regulations (Viscusi et al., 2005; Boyer and Porrini, 2004). The second strategy, which may be easier for consumers to understand, may increase competition between firms because of the standardization effect.

Method. The main technical problem is the formalization of the demand function (Cooper, J., et al., 1995, Based on results obtained in studies concerning consumer behaviour (WP1 and WP3), some main variables influencing consumer choice will be selected. Examples of such variables are information concerning "bad" food practices, dietary recommendations, prices and taste. We will construct a demand function, i.e. quantity as a function of prices, (objective) characteristics of products, and consumers' perception of these characteristics. We will then analyse the strategic choices of firms with respect to nutritional issues. This will provide a better understanding as to how the strategic behaviours of firms are affected by public regulations involving voluntary agreements.

Expected results., The analysis of already signed agreements and the economic model will allow us to (i) identify the incentives firms have to pursue private strategies in order to relax competition, to pre-empt public regulatory interventions and to influence future public regulation, (ii) identify the incentives firms have to adhere to voluntary public certifications and compare it with the incentives to pursue a purely private strategy (iii) examine how public policies should be formulated to be most efficient given the strategic behaviour of firms.

Task 3. Comparative analysis of how taxation and standardization affects the strategic behaviour of firms (INRA-LORIA). Different public tools have been considered by policy-makers to influence the characteristics of food products. For instance, taxes on food and fat have been proposed as means to modify the relative prices and improve the dietary intake of consumers. A major objective in this WP is to examine how such taxes and/or subsidies affect the behaviour of firms, an issue that so far has received little attention in the literature. It is very important to better understand how the behaviour of firms are affected by such regulations as the way firms respond may either amplify or counteract the outcome intended by policy makers. We will examine how public authorities should design policies based on taxes and subsidies in a way that encourage initiatives/actions taken by firms that decrease the risk associated with deficient food intakes. Naturally, this is especially important among the segments of the population with the highest risk of health problems related to food intake. The question is what kind of regulation is most efficient in this respect: compulsory regulations involving normalization and certification, or a tax on unhealthy inputs? We argue that the optimal approach depends on the expected strategic behaviour of firms and the trade-off between a situation with and a situation without regulatory constraints.

Method. First, in collaboration with WP2a we will examine how nutritional content and final price (in the case of foods studied in WP2a) are affected by taxes/subsidies on specific inputs (i.e. sugar, fat, salt). Then, we will expand on the economic formalization proposed in task 2 and analyze i) the impact of a public regulation concerning food characteristics (Minimum Quality standards and norms), and ii) the effect of a tax on inputs and the possible complementary or substitutability between such a tax and other types of regulations. The existing empirical literature on health economics will be surveyed in order to identify a cost function describing the cost to society related to deficient nutritional food intake.

Expected results. The work will begin with a comparative analysis of public policies presently used around the world in order to tackle nutritional problems. Taking the strategic behaviour of firms into account, we will evaluate the different public policies observed and we will show why a certain policy of standardization, taxation or their combination may be preferable from a public point of view. We will also examine how taking market structure and the risk perception of consumers into account can guide policy makers in designing efficient public regulations.

WP3. EXPERIMENTAL STUDY OF THE INDIVIDUAL IMPACT ON DAILY FOOD INTAKES GENERATED BY FOOD POLICY-MIX

Actual changes in diets are known to be very complex processes, varying from one subject to another, unstable in time, conditioned by many variables (taste, satiation, economic and social constraints, etc.). The direct observation of such changes in food behaviour is highly difficult to do on the base of field data analysis. This work package proposes an alternative methodology. Primarily based on the tools of experimental economics, nutrition sciences and, at a more exploratory level, on the tools of experimental psychology [7], this work package is devoted to the implementation of a laboratory

protocol enabling a direct and noise-free observation of individual changes in behaviours under the impact of a given nutrition policy. More precisely, the aim here is to design and operate an **experimental economics device allowing an individual and micro-dynamic observation of the impact on daily food intakes of a large range of food policies, including policy-mix**. This WP is then dedicated to the observation of *changes* in a global daily individual intake under the impact of a controlled implementation of a precise food policy, when this policy may be a complex mix of different political ingredients (taxes, subsidies, general information, labelling, change of ingredients in recipes, etc.). The unit of observation is the individual daily food intake, defined as the set of food and beverage rations actually chosen by a subject for a 24 hours individual consumption. During the experiment, the elementary task of a subject is to choose, among hundreds of different possibilities, his daily food and beverage consumption, precisely defined as its 'day after' only consumption. Expected changes in consumer behaviours funding the policies are based on normative wishes from the public authorities. For our experiment, nutritionists might be able to valuate (score) the pre-policy daily food intake of a participant (given a set of characteristics such as age, gender, weight and size, physical practices, etc.) [8]. Nutritionists then might be able to score the post-policy choice of the same participant and, therefore, to score the policy itself for a given subject. With the in-time scoring that we intend to develop in our protocol, we shall be able to implement result oriented experiments, able to identify the policy-mix required to obtain a given result for a given subject.

Task 1. Design of the precept experimental economics protocol, and explore new related experimental psychology tools to observe and understand changes in individual behaviours

The first task of WP3 is to design an experimental protocol enabling to test the impact of various Policy-mix on the individual behaviour concerning a daily food intake. Practically, such a protocol is already under construction in the program PolNutrition (PNRA 2005) and used to observe the reaction of individuals with very low incomes to a price policy (lower prices for fruits and vegetables and higher prices for highly sugared items, such as soda). The goal here will be to generalize the methodology implemented in the program PolNutrition in order to take into account not only the prices, but also information and food characteristics.

Method. Using hundred of pictures of food and beverage rations, the protocol allows subjects to build a first daily choice, which is used as a point of reference. A policy is then implemented and presented to the subject who is then invited to modify its initial choice. The duration of an experiment is about a couple of hours. Within the frame of this project, we propose to improve the initial protocol in the following directions:

(i) Develop a new computer program allowing friendly choices, the proceeding by trial and error, among the hundred of possible choices.

(ii) Develop, with the help of the nutritionists of this project, a set of scores enabling an in-time valuation of any choices of a given subject. The computer program will allow informing (or not) the subject about its score, and immediate changes in score when locally changing its choices.

(iii) With the help of neuroscientists and experimental psychologists, develop tools (and instruments of analysis), integrated in the precept protocol, allowing to observe the path of change in decisions under the impact of a changing policy, and readapt the policy accordingly. This is a complement of the previous point, enabling to design a dynamic protocol where we may observe changes in behaviours and follow the individual track of each subject.

(iv) In parallel, the post-doc psychologist will develop specific tools allowing to characterize behavioural changes according to the dimension of the change concerned (taste, practicity, nutrition, price, habits, etc.)

Task 2. Operating the protocol to help political design including information, and to contribute a better understanding of behavioural change. We propose to use the precept protocol in order to deal with the following points:

(i) *Characterization of efficient information policies.* In particular, we shall compare the impact on behaviours of product-by-product information with global recommendation. We shall also compare various types of product-by-product information. This sub-task is closely related to the WP1 (labelling/claims and general information impacts).

(ii) *Characterization of efficient policy mix, including information.* It is important to understand the "composition law" of a Policy-Mix, i.e. the own impact on behaviours of each component of the Policy-Mix. The objective is to know whether these components are complementary or substitute, and in particular whether the combination of policies is beneficial or at the contrary generates undesired effects. The global approach experimental device would also permit the observation of food behaviour changes when a Policy-mix is applied. For example, it would make possible the examination of the impact on food behaviours when the policy consists of concomitant price variations, product

modifications and information manipulation by the means of food labels. This sub-task is also related to WP1 and WP2.
As the experimental device is individualized and transportable, one can target precise sets of population. Thanks to a well defined selection of profiles, we will focus on specific categories of people (wealth, age, weight, etc.).
Collaborations needed by WP3. The works conducted in WP3 will be highly connected with the other WP. Apart the design and the programming work which will be carry out by Team 3 (GAEL), several collaborations will be set up.
The variable is not the consumption of one or some targeted products but the whole 24h food consumption of a subject *i* (JA_i). The JA consists of a selection of food portion (SPA) established within SU.VIMAX by Serge Hercberg and his team. It comprises several hundreds of items (including drinks). The nutritional composition of the SPA is analysed and integrated in the experiment software. This will provide the computation basis for the *nutritional scoring* elaboration by the nutritionists of the project (Serge Hercberg and Nicole Darmon's teams). Thanks to adequate software, the scoring will be calculated immediately and made available to the subjects. Thus, we will be able to make the subjects (with the help of the psychologists) work out, identify and describe a nutritional reference of each subjects' JA (JA_{ref}).
The policy-mix scenarios to be tested will be identified on the basis of a tight collaboration with the entire team and from WP1 and WP2 results. According to the actions and reactions of the subjects and with the help of the psychologists and nutritionists, policies adjustments could be made.
Once a policy is presented, the subject is invited to modify his JA_i by proceeding by trial and error and thus to create a new JA ($JA_{i\ pol}$). The software will take an account all the changes made by the subjects (substitutions, sequences, choice temporality, etc.). Not usually considered in traditional experiments, features like the decision process (the length, the why and the wherefores) will be analysed with the help of the psychologists notably in the software conception. The post-doctoral position in experimental psychology would be directed by Bernard Ruffieux and Françoise Bonthoux (experimental psychologist in the CNRS LPNC – Laboratory of Psychology and NeuroCognition – unit of Grenoble).
Expected Results. They are of two types: first, the development and the finalization of the experimental device and second, the use of this device.
- **Examination of a policy impact on individual behaviours.** The experimental device should permit i) to test the relative efficiency of a policy, ii) to identify whether the policy tools (price, information, products offer, etc.) are additive. The method used will permit to study the direct effects (changes in product consumption, i.e. price elasticity) and indirect effects of substitutions and complementarities.
- **Substitutes mapping.** The experiment should reveal the topography of food substitutes according subjects groups (wealth, age, etc.). That will permit the identification of the 'good products' that *can in effect* replace the 'bad products' according to the observed behaviours.
- **Theorization and modelling** of the individual *change* of the food behaviour when a food policy is implemented. With the help of the experimental psychologists, theorization and modelling of the different components responsible of the behaviour changes (taste, health, price, practicity, habits).

4.1.2. Interactions between the WPs and animation of the project. The research conducted within the scope of the WP is ultimately intended to contribute to analysing those interventions which seek to change consumer behaviour and industrial strategy, and to assess their complementarities (or substitutability) in relation to meeting public health objectives. To ensure successful results, the present project will be managed in such a way as to encourage exchanges and debates within each WP and between the different WPs. A scheme of the interactions between WP is given in Figure 2. The project will be based on a "multilevel" animation. First, the works will be regularly confronted between the participants within each WP, in order to favour the interactions needed to address the questions mentioned above. For instance, the collaboration between WP2a and WP2b will be organized in order to be able to identify the ability of firms to modify food characteristics, voluntarily or under public constraints. One leader in each WP will be in charge of organizing and leading these meetings. Each WP leader will write a short report at the end of each year in order to identify the convergences/divergences of the results obtained by each task in each WP.
The exchanges and debates between WP1 and WP2 will be focused on the possible interactions between consumer-targeted public interventions and the strategies of private firms. For example, information, generic or product-related (labelling and nutritional/health claims) policies are intended to aid consumers in making their choices. However, given that these campaigns highlight the product characteristics (positive and/or negative) and condition their vertical differentiation, it follows that these campaigns necessarily have an impact on the food industry's decisions related to the composition of

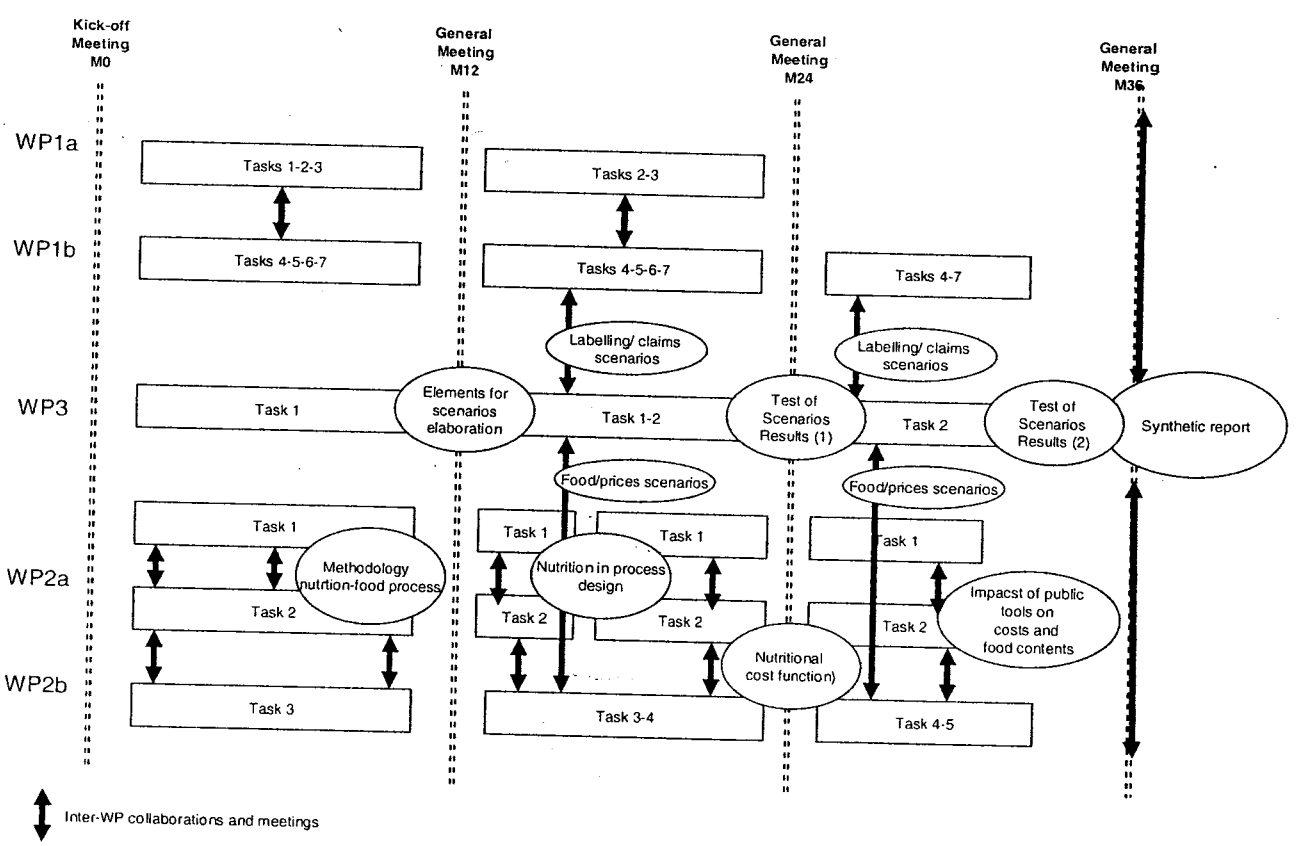
food products and the segmentation of the market. **Do the decisions made by the food industry enhance or diminish the impact of the actions taken in favour of the consumers (from an health point of view)?**

WP3 will analyse the impact of the policy-mix (information – price – characteristics) on individual nutrient intakes. As a result, this WP clearly represents one **focal point of the project at which some of the results will be integrated, compared and challenged**. The research work conducted within the scope of WP1 and WP2 will be used to formulate hypotheses related to the possible combination of variables (i.e. policy-mix scenarios) to be tested in the experimental economic device of WP3. The experimental results will in turn serve to provide data for further research into certain tasks of WP1 and WP2. During the first year, WP3 will be dedicated to the design and the validation of the experimental setting. At the end of the first year, this device will be validated and the first results in the WP1 and 2 will be available. We propose the following organisation:

- a project kick-off meeting (1 day);
- one meeting per WP every 6 months and/or at key stages of the project management process.
- a two-day meeting for all project participants at the end of each year.
- working group meetings. This group will be made up of "volunteers" from the three WPs, and will propose/analyse policy-mix hypotheses to be tested within the scope of WP3 from the end of the first year.

The two-day meeting at the end of the second year will opened to 2-3 invited researchers (US, UK and North Europe) in order to obtain feedback on the project from international specialists. At the end of the third year an International Conference will be held. It will include the presentation of the main results of the project, presentations by guest speakers and contributed papers. A synthetic report intended for policy-makers and professionals will be written (co-authored by the participants of the project) and disseminated. On this basis, will be proposed two meetings with policy-makers and professionals.

A website will be created in order to organize information exchange within the project.



In this scheme, we do not take into account the phases dedicated to the redaction and the dissemination of the results in each Task

Figure 2. Planning of Tasks and inter-WP meetings

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EQUIPE 1

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator	Soler	Louis-Georges	Directeur de Recherche	INRA/LORIA	9	Project coordination and animation. Participation to the WP2b and coordination with WP2a. Descriptive analysis, surveys, economic modelling Task 3.
Membre /Member	Hammoudi	Abdelhakim	Chargé de Recherche	INRA/LORIA	7	Coordinateur du WP2b. Economic modelling Task 3.
Membre /Member	Giraud-Héraud	Eric	Directeur de Recherche	INRA/LORIA	7	Descriptive analysis, surveys, economic modelling Task 2
Membre/Member	Poret	Sylvaine	Chargé de Recherche	INRA/LORIA	10	Surveys, economic modelling Task 2
Membre/Member	Bazoche	Pascale	Ingénieur de Recherche	INRA/LORIA	10	Surveys, economic modelling Task 2
Membre/Member	Sébillotte	Clémentina.	Ingénieur de Recherche	INRA/LORIA	10	Descriptive analysis Task 1, surveys, collaboration with WP2a,
		TOTAL	**personnel (Permanent**	**Permanent staff)**	53	
Personnel temporaire à recruter sur le projet (temporary staff to be financed)	Nom/Surname	Prénom/Forename	Niveau de recrutement pour CDD (Recruitment level)	Année de recrutement pour CDD (year of the beginning of the contract)		
Temporary mission	(If known)	(If known)				
Temporary mission	(If known)	(If known)				
		TOTAL	**Personnel (temporary**	**Temporaire staff)**		
		TOTAL	**GENERAL**	**Personnel (staff)**		

EQUIPE 2

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator	Caillavet	France	DR2	INRA	7	Etude sur la demande nutritionnelle (WP1 tâche 8)
Membre /Member	Allais	Olivier	CR2	INRA	3.5	Risques de santé et comportements d'achat des produits avec allégations (WP1 tâche 7).
Membre /Member	Etilé	Fabrice	CR1	INRA	18	Homogénéité des representations de la santé et de l'alimentation (WP1 tâche 2). Evaluation économique des effets des interactions sociales (WP1 tâche 3). Risques de santé et comportements d'achat des produits avec allégations (WP1 tâche 7).
....	Lecocq	Sébastien	CR1	INRA	9	Modélisation de la demande nutritionnelle (WP1 tâche 8). Risques de santé et comportements d'achat des produits avec allégations (WP1 tâche 7).
	Lhuissier	Anne	CR1	INRA	3.5	Etude sociologique sur les représentations individuelles de la santé, du corps et de l'alimentation (WP1 tâche 2)
	Nichele	Véronique	IR1	INRA	18	Elaboration de la base de données alimentation/nutrition. Etude sur la demande nutritionnelle (WP1 tâche 8). Etude sur les déterminants de l'achat de « health foods » (WP1 tâche 6).
	Régnier	Faustine	CR1	INRA	3.5	Coordination et analyse sociologique de l'impact des campagnes d'éducation et d'information (WP1 tâche 1)
	Clark	Andrew	DR	CNRS	3.5	Evaluation économique des effets des interactions sociales (WP1 tâche 3).
		TOTAL	**personnel (Permanent**	**Permanent staff)**		
Personnel temporaire à recruter sur le projet (temporary staff to be	Nom/Surname	Prénom/Forename	Niveau de recrutement	Année de recrutement		

financed)			pour CDD (Recruitment level)	pour CDD (year of the beginning of the contract)		
CDD	(If known)	(If known)	IE	2008	3	Elaboration de données sur la consommation alimentaire des ménages (WP1 tâche 8)
CDD	Cardon	Philippe	Post-doctorant	2008	12	Enquêtes sociologiques sur l'impact des campagnes d'éducation et d'information auprès des personnes âgées (WP1 tâche 1)
CDD	Masullo	Ana	doctorant	2008	12	Enquêtes sociologiques sur l'impact des campagnes d'éducation et d'information auprès de personnes précaires et d'obèses (WP1 tâche 1)
		TOTAL	**Personnel (temporary**	**Temporaire staff)**		
		TOTAL	**GENERAL**	**Personnel (staff)**		

EQUIPE 3

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	**Nom/Surname**	**Prénom/Forename**	**Title/grade / Emploi (Job)**	**Organisation/ firm**	**Nombre de mois homme / Man.month (*)**	**Rôle dans le projet /Responsibilities in the project (maximum 4 lines)**
	Ruffieux	Bernard	Professeur	UPMF	3.6	Responsable du projet. Coordination de la conduite des expériences. Maître d'œuvre de l'analyse des résultats. Rédaction des articles scientifiques.
	Muller	Laurent	CR2	INRA	14.4	Coordination et participation à toutes les étapes du projet : élaboration du protocole, conduite des expériences, analyse des données, rédaction des articles scientifiques et présentation des résultats (colloques, soumissions)
	Dupuis	Jean-Loup	IE2	INRA	10.8	Conception des programmes informatiques des expériences. Conduite technique des expériences.
	Carrère	Myriam	IE2	INRA	10.8	Analyse statistique des résultats
	Lacroix	Anne	IR1	INRA	7.2	Analyse de la littérature. Identification des problèmes. Coordination du volet statistique
	Jullien	Céline	MCF	UPMF	3.6	Analyse de la littérature. Identification des problèmes. Participation à la conception et à la conduite des protocoles expérimentaux. Analyse des résultats
	Garapin	Alexis	MCF	UPMF	3.6	Analyse de la littérature. Identification des problèmes. Participation à la conception et à la conduite des protocoles expérimentaux. Analyse des résultats
	Baciu	Monica	Professeur	UPMF	3.6	Mise en place du protocole et conduite des expériences neuropsychologiques.
Coordinateur/ Coordinator						
Membre /Member						
Membre /Member						
....			8		57.6	
		TOTAL	**personnel (Permanent**	**Permanent staff)**		

EQUIPE 4

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator	Monier-Dilhan	Sylvette	Chargée de Recherche	INRA	4,8	Coordinator Researcher Economist
Membre /Member	Hassan	Daniel	Chargé de Recherche	INRA	3,6	Researcher Economist
Membre /Member	Simioni	Michel	Directeur de Recherche	INRA	3	Researcher Econometrician
Membre /Member	Bontemps	Christophe	Ingénieur d'Etudes	INRA	3	Ingineer Statistician
Membre /Member	Nichèle	Véronique	Ingénieur de recherche	INRA	3,6	Ingineer Statistician
			TOTAL personnel (Permanent	**Permanent staff)**	18	
Personnel temporaire à recruter sur le projet (temporary staff to be financed)	Nom/Surname	Prénom/Forename	Niveau de recrutement pour CDD (Recruitment level)	Année de recrutement pour CDD (year of the beginning of the contract)		
Temporary mission	(If known)	(If known)				
Temporary mission	(If known)	(If known)				
			TOTAL Personnel (temporary	**Temporaire staff)**		
			TOTAL GENERAL	**Personnel (staff)**		

EQUIPE 5 : UREN

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator	HERCBERG	Serge	PU-PH	Paris 13	3	Coordination
Membre /Member	VALEIX	Pierre	CR1	CNRS	14,5	Conception des outils
Membre /Member	MAILLARD	Laurence	MCF	Paris 13	9	Analyses statistiques
Membre /Member	FERRAT	Frédérique	IE	INSERM	11	Logistique
Membre /Member	FERRAY	Jean-Claude	IE	INSERM	18	Organisation pratique
Personnel temporaire à recruter sur le projet (temporary staff to be financed)	Nom/Surname	Prénom/Forename	Niveau de recrutement pour CDD (Recruitment level)	Année de recrutement pour CDD (year of the beginning of the contract)		
Temporary mission	PENEAU	Sandrine	IE	2007	12	Réalisation pratique de l'étude de terrain
Temporary mission	(If known)	(If known)				
			TOTAL	**Personnel (temporary**	**Temporaire staff)**	12
			TOTAL	**GENERAL**	**Personnel (staff)**	67,5

EQUIPE 5:METARISK

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator	BLANCHEMANCHE	Sandrine	IR	INRA Met@risk	7.2	Coordination, Analyse sociologique
Membre /Member	MARETTE	Stépahn	DR2	INRA Economie Publique	3.6	Analyse économétrique
Membre /Member	ROOSEN	Jutta	Pr	University of Kiel and INRA-Met@risk	3.6	Analyse économétrique
		TOTAL	**Personnel (temporary**	**Temporaire staff)**	0	
		TOTAL	**GENERAL**	**Personnel (staff)**	14.4	

EQUIPE 6

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator	Darmon	Nicole	Ingénieur	INSERM	18	Coordination scientifique et encadrement technique. Elaboration des protocoles d'analyse, interprétation et diffusion des résultats. Rédaction des rapports et des publications.
Membre /Member	Amiot-Carlin	Marie-Josephe	Directeur de Recherches	INRA	3	Participation l'élaboration des protocoles d'analyse et à l'interprétation des résultats.
Membre /Member	Léger	Claude	Directeur de Recherches	INRA	3	Participation l'élaboration des protocoles d'analyse et à l'interprétation des résultats.
Membre /Member	Maillot	Matthieu	Doctorant	INRA	12	Elaboration des modèles de recherche opérationnelle, participation à l'interprétation et à la diffusion des résultats
		TOTAL	**personnel (Permanent**	**Permanent staff)**	36	
Personnel temporaire à recruter sur le projet (temporary staff to be financed)	Nom/Surname	Prénom/Forename	Niveau de recrutement pour CDD (Recruitment level)	Année de recrutement pour CDD (year of the beginning of the contract)		
Temporary mission	(If known)	(If known)	IE	2008	15	Mise en oeuvre des techniques de scoring et des modèles de recherche opérationnelle. Analyse statistique et présentation synthétique des résultats. Participation à l'interprétation des résultats.
Temporary mission	(If known)	(If known)				
		TOTAL	**Personnel (temporary**	**Temporaire staff)**	15	
		TOTAL	**GENERAL**	**Personnel (staff)**	51	

EQUIPE 7

Acronym of the project and number of the project ALIMINFO

Personnel permanent et personnel temporaire non financé par le projet (permanent staff and temporary staff not financed by project)	Nom/Surname	Prénom/Forename	Title/grade / Emploi (Job)	Organisation/ firm	Nombre de mois homme / Man.month (*)	Rôle dans le projet /Responsibilities in the project (maximum 4 lines)
Coordinateur/ Coordinator						
Membre /Member	trystram	Gilles	professor	Agroparistech	5	Coordination équipe UMR génIAl, optimisation et modélisation
Membre /Member	Trezzani	Isabelle	Maitre de Conférence	P12 (en convention avec AgroParisTech pour la recherche	12	Définition de la méthode, définition des essais, modélisation
....	Bertolucci	Gwenola	Maitre de Conférence	AgroParisTech	10	Définition de la méthode, définition des essais, modélisation, définition des critères
	Neveu	Aurélien	Technicien	Agroparistech	10	définition, réalisation des essais et es analyses conjointes
		TOTAL	**personnel (Permanent**	**Permanent staff)**		
Personnel temporaire à recruter sur le projet (temporary staff to be financed)	Nom/Surname	Prénom/Forename	Niveau de recrutement pour CDD (Recruitment level)	Année de recrutement pour CDD (year of the beginning of the contract)		
Post doc			Post doc	Month 6	12	
		TOTAL	**Personnel (temporary**	**Temporaire staff)**	12	
		TOTAL	**GENERAL**	**Personnel (staff)**	39	

PUBLICATIONS DES EQUIPES ENGAGEES

Equipe 1

Giraud-Héraud, E., Rouached, L., Soler, L.G, (2006). Private labels and Public Quality Standards : How to restore consumer's trust after the mad cow crisis?, *Quantitative Marketing and Economics*, 4, pp 31-55.
Soler, L.G., Retailers' Strategies in the Food Marketing Chain, 2005, *Journal of Agricultural & Food Industrial Organization*, 2005, Vol.3, n°1, Article 1.
Bazoche, P., Giraud-Héraud, E., Soler, L.G., Premium Private Labels, Supply Contracts, Market Segmentation, and Spot Prices (2005), *Journal of Agricultural & Food Industrial Organization*, 2005, vol.3, n°1, Article 7.
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Poret, S., Téjédo, C. (2006), Law Enforcement and Concentration in Illicit Markets, *European Journal of Political Economy, vol. 22 n° 1, 2006*, pp. 99 - 114.

Equipe 2

A.E. Clark et F. Etilé - "Don't give up on me baby! Spousal correlation in smoking behaviour", *Journal of Health Economics, 2006*, 25, 958-978.
F. Etilé - "Social Norms, Ideal Body Weight and Food Attitudes" - *Health Economics, fothcoming* 2007.
S. Lecocq, M. Visser - "Spatial Variations in Weather Conditions and Wine Prices in Bordeaux", *Journal of Wine Economics*, 1, 114-124, 2006.
Régnier F., Lhuissier A., Gojard S., Sociologie de l'alimentation, *La Découverte*, 2006.
Régnier F., « Obésité, corpulence et souci de minceur : inégalités sociales en France et aux Etats-Unis », *Cahiers de Nutrition et de diététique*, 41, 2, 2006, p.97-103.
Lhuissier A. Education alimentaire en milieu populaire : des normes en concurrence. *Le Journal des Anthropologues*, n° Spécial " Des normes à boire et à manger", 2006, n°106-107 : 61-76.

Equipe 3

Noussair Charles, Robin Stéphane, Ruffieux Bernard, "Revealing Consumers' Willingness-To-Pay: A Comparison of the BDM Mechanism and the Vickrey Auction" *Journal of Economic Psychology*, Issue 6, December 2004, pp725-741.
Noussair Charles, Robin Stéphane, Ruffieux Bernard, « A Comparison of Hedonic Rating and Demand-Revealing Auctions », *Food Quality and Preference*, 15, 2004, pp 393-402.
Noussair Charles, Robin Stéphane, Ruffieux Bernard, "Do consumers really refuse to buy genetically modified food?" *The Economic Journal*, 114, January 2004, pp 102-120.
Noussair Charles, Robin Stéphane, Ruffieux Bernard, « Organismes génétiquement modifiés dans l'alimentation humaine : l'opinion publique contre les comportements des consommateurs », *Revue économique*, vol. 54, N°1, janvier 2003, pp 47-69.
Noussair Charles, Robin Stéphane, Ruffieux Bernard, « Do consumers Not Care About Biotech Foods or Do They Just Not Read the Labels ? », *Economics Letters*, **Volume 75, Issue 1, 01-March** 2002, pp 47-53.

Equipe 4

Bergès-Sennou F., D. Hassan, S. Monier-Dilhan and H. Raynal (2006) "Consumers' decision between private labels and national brands in a retailer's chain: a mixed multinimial logit application" Working paper.
Bonnet C. and M. Simioni (2001), "Assessing Consumer Response to Protected Designation of Origin Labeling: A Mixed Multinomial Logit Approach", *European Review of Agricultural Economics*, 28, pp. 433-449, 2001.
Bontemps C., M. Simioni and Y. Surry (2006) "Semiparametric Hedonic Price Models: Assessing the Effects of Agricultural NonPoint Source Pollution". Acceptation au *Journal of Applied Econometrics.*
Bontemps C., V. Orozco, V. Réquillart and A. Trévisiol,(2005)"Price Effects of Private Labels Development" with Vol. 3: No. 1, *Journal of Agricultural & Food Industrial Organization.*
Hassan D. and S. Monier-Dilhan (2006) *National brands and store brands : competition through public quality labels* Agribusiness 22(1) 21-30.

Equipe 5 (UREN)

Bellisle F, Dalix AM, Mennen L, Galan P, Hercberg S, de Castro JM, Gausseres N Contribution of snacks and meals in the diet of French adults: a diet-diary study. *Physiol Behav*, 2003, 79: 183-189.

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Bellisle F, Clément K, Le Barzic M, Le Gall A, Guy-Grand B, Basdevant A. The Eating Inventory and body adiposity status from leanness to massive obesity: a study of 2509 adults. *Obesity Research*, 2004, 12, 2023-2030.
Galan P, Viteri F, Bertrais S, Czernichow S, Faure H, Arnaud J, Ruffieux D, Chenal S, Arnault N, Favier A, Roussel AM, Hercberg S.Serum concentrations of beta-carotene, vitamins C and E, zinc and selenium are influenced by sex, age, diet, smoking status, alcohol consumption, and corpulence in a general French adult population. *European Journal of Clinical Nutrition*, 2005, 59, 1181-1190.
Czernichow S, Bruckert E, Oppert JM, Bertrais S, Paillard F, Astorg P, Arnault N, Galan P, Hercberg S.Intake of added oils and fats among middle-aged French adults: relationships with educational level and region of residence. *Journal of the American Dietetic Association*, 2005, 105, 1889-1894

Equipe 5 (Metarisk)

Blanchemanche S., Marette S., Roosen J., Verger P., 2006. Food Risk Management and Regulatory Experiments. The case of Methylmercury in Fish, *Values in Decisions on Risk Symposium*, 14-18 May, Stockholm, Proceedings Book, 441-448.
Roosen J., Marette S., Blanchemanche S., Verger P., 2007. The Effect of Product Health Information on Liking and Choice, *Food Quality and Preference*, à paraître.
Blanchemanche S., Marette S., Roosen J., Verger P., 2007. Information and Risk Management. Why Consumers do not Comply with Regulators' Expectations ? *Risk and Rationalities Conference*, Queens' College, Cambridge.

Equipe 6

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4 .2. Répartition du programme des travaux

The Resarch Unit **LORIA-INRA Ivry** (Dir. L.G. Soler) is made of industrial economists. Their research program deals with the industrial organization of the food sector. Many works have focused on quality and food safety issues, and especially their impacts on the vertical relationships, and on the creation and the sharing of the value between stakeholders from upstream (producers) to downstream levels (consumers). They have proposed empirical and theoretical analyses dealing with food safety regulation, private norms, and minimum quality standards. A major issue explored recently has been the role of large retailers on the food chain organization and the public regulation related to food safety regulation. 6 researchers and engineers will contribute to **tasks 3 and 4 of WP2**. This project is an opportunity to develop new works on food regulation and quality by taking into account nutritional issues. It is also an opportunity to set up collaborations with nutritionists and food scientists.

The Consumption Research Laboratory (CORELA, Dir. France Caillavet) is a pluridisciplinary laboratory where economists, sociologists and historians focus on food consumption and foodways. The relationships between health and food constitute a major field of research for the laboratory, which collaborates with nutrition scientists (through the Human Nutrition Research Center, CRNH Ile de France). Economics and consumer behaviour, health economics, econometrics, sociology will be the main Corela contributions at work in this project. 7 researchers, 1 post-doc. and 2 PhD students will be involved in the tasks **1, 3, 4, 5, 6,7 of WP1**. Through this project, new collaborations could be implemented with industrial and experimental economists. Our traditional field of research is the consumer side. Of particular interest is the opportunity to gather analysis from demand and supply perspectives, and to enlighten the feasibility of different options of policy mix.

UMR INRA-GAEL is a research lab (Dir. B. Ruffieux) which is specialised in applied both in industrial economics and in consumer economics. It uses econometrics and experimental economics as its basic empirical methods. Its three main fields of applied research competencies are (i) the economic consequences of biotech innovation on agriculture and food supply, (ii) market design, and (iii) consumers' food behaviour changes. Regarding this last field, recent researches did investigate questions as products innovations (GMO-food, functional food), new labelling, flavour, pricing, information, fair-trade. We also did investigate various methodological issues regarding experimental methods related to food consumption (various auctions, posted-prices, subject incentives, parallelism). The lab moved toward nutrition since the issue has been stated as a national priority by INRA. We then develop new relationships with nutritionists (PolNutrition). This PolNutrition program represents an excellent starting point for the present project, which may be considered as an ambitious generalization and deepening of it. The expected value added is huge, as we anticipate disposing an influential new tool for analysing a wide range of nutrition policy based on consumer incentive. 8 researchers and engineers will contribute to the WP3.

UMR GREMAQ-INRA of Toulouse (Dir. M. Le Breton) is made of industrial economists and econometricians. Some of them develop research applied to the food sector and public health regulation. The researchers involved in this project have made a lot of works on food quality, price transmission in chains, brands and private labels. They have also studied the impacts of the signals of quality on consumers' willingness-to-pay and have a large experience in econometric methods and applied economics. Their involvement in the present project **(WP1, Task 5)** will allow extending the works on quality signals, by considering nutritional quality. They will give useful insights for the whole project related to the impacts of nutritional claims.

L'UREN (Unité de Recherche en Epidémiologie Nutritionnelle) is a mixed research unit INSERM/INRA/CNAM/Paris13 specialized in studying the relationships between dietary intake, nutritional factors and health at a population level. This team has good skills and experience in dietary data assessment and management of epidemiological studies. Since several years, UREN in involved in the development of dietary pattern and relation to heath status. UREN has a main interest in the knowledge of factors determining food choices (information, labelling, availability of fooods, economic contrainsts, cultural factors,...). In this project, UREN will collaborate with researcher of the unit Met@risk INRA (Dir. P. Verger) and will allow a collaboration between epidemiologists and sociology.

The INSERM UMR Unit 476 combines descriptive and mechanistic approaches in human nutrition, using various methodologies, from molecular biology, cell culture, genetic and nutritional animal models, to nutritional epidemiology. The mechanisms regulating the digestion and bioavailability of essential nutrients are studied, as well as their implications in chronic diseases. In this Unit, Nicole Darmon is developing diet modelling approaches aimed at designing nutritionally optimal diets for individuals, taking into account the specific nutritional needs and food preferences of individuals, the nutrient contents of available foods, as well as other constraints possibly influencing food choices. Collaboration with researchers from economics, sociology and food engineering specific, within the

Alimnfo project, will help the team to develop this integrative approach to get a better understanding on how each food participate to global nutrient intakes, and to identify which food choices are adequate to improve the nutritional quality of individual diets.
Join Research Unit **GENIAL (UMR 1145, Cemagref/ENSIA/INAPG/INRA)** is working in Food Process Engineering. Its objectives are to understand and quantify the mechanisms that are carried out during transformation of food or intermediate products, in order to design, improve, optimize and control, in order to obtain reliable processes. The team involved in this project is dedicated to modelling, optimisation and reaction engineering approaches for process design and control. The work is planed to be done using experimentation with real time instrumentation, modelling, mainly through the combination of classical heat and mass transfer approaches and chemical or physical modelling approaches. With one researcher coming from **CEPAL-AgroParisTech Massy** (Dir. B. Colas), GENIAL will be in charge of WP2a Task 2 and will collaborate with nutritionists (task 1) and economists (WP2b). The project will allow to better integrating the nutritional issues in food engineering and set up new relationships with social science.

5 - RESULTATS ESCOMPTES – PERSPECTIVES /*EXPECTED RESULTS*
(1 page maximum)

Présenter les résultats escomptés, en proposant des critères de réussite et d'évaluation (quantitatif et qualitatif).
Décrire également les perspectives scientifiques et/techniques ouvertes au-delà de la durée du projet.
Présenter les retombées liées au projet : santé publique, retombées industrielles et économiques, autres... (argumentation chiffrée) et valorisation prévue des résultats (colloques, publication, valorisation industrielle, brevet...).
Si la mise au point d'un nouveau produit, procédé ou service est visée, on traitera également le problème des réglementations et des normes existantes ou à venir.

Scientific results

The main expected results are:
- Impact of norms and social representations on the implementation of nutritional and educational information aimed at encouraging new food product consumption practices and prevention (sociology and economics): To what extent do they amplify or limit impacts of information policies?
- Contribution of product related information (labelling and nutritional/health claims) to the adoption of consumption behaviours which take into account the health benefits and risks (sociology, nutrition, and economics): under what conditions they positively contribute to better nutrient intakes?
- Analysis and validation of a nutritional profiling system (nutrition): is the concept of nutrient profiling relevant for estimating the contribution of individual foods to global dietary quality? Is it a good tool for consumer information and labelling?
- Methodology for the analysis of the compromises between technological, economic, nutritional and sensory dimensions in food formulation and processing (food engineering): how to integrate a global nutrient indicator in food processing design?
- Evaluation of the effects of public interventions (taxation, standardisation, and voluntary agreements) on production and marketing decisions of firms (economics): what can be the contribution of policies dealing with supply regulation to public health goals?
- Design and validation of an original economic experimental device to evaluate the impact of public interventions (experimental economics, psychology): how to assess the impacts of policies on individual intake changes?
- Application of this device to the assessment of the impacts on nutritional intakes of information, price and food characteristics modifications (economics): are the various policies substitute or complementary? What combination is the best according to the desirable goals of public authorities?

The first criterion of success will be the number of scientific publications. At least one or two papers by task will be submitted to academic journals (i.e. at least 20 academic publications) and **as much communications** in conferences will be proposed.

Moreover, **collaborations between disciplines** will allow obtaining new results on issues at the interface between disciplines. The expected results are:

Alimnfo project, will help the team to develop this integrative approach to get a better understanding on how each food participate to global nutrient intakes, and to identify which food choices are adequate to improve the nutritional quality of individual diets.
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5 - RESULTATS ESCOMPTES – PERSPECTIVES /*EXPECTED RESULTS*

(1 page maximum)

Présenter les résultats escomptés, en proposant des critères de réussite et d'évaluation (quantitatif et qualitatif).
Décrire également les perspectives scientifiques et/techniques ouvertes au-delà de la durée du projet.
Présenter les retombées liées au projet : santé publique, retombées industrielles et économiques, autres... (argumentation chiffrée) et valorisation prévue des résultats (colloques, publication, valorisation industrielle, brevet...).
Si la mise au point d'un nouveau produit, procédé ou service est visée, on traitera également le problème des réglementations et des normes existantes ou à venir.

Scientific results

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Moreover, **collaborations between disciplines** will allow obtaining new results on issues at the interface between disciplines. The expected results are:

TABLEAU DE SYNTHESE des LIVRABLES et des JALONS
(Synthetic table of the deliverables and milestones)

WP1a and WP1b

Tâche (Task)	Deliverables and milestones Tasks (X) and sub-tasks (X.X.) **In bold : deliveries**	Date de fourniture ***nombre de mois à compter de T0 calendar (month of delivery T0)***	Partenaire responsable du livrable/jalon (Partner in charge)
1. Nutritional education and behavior adaptation of specific groups of consumers			
	1.1. Preparation of the interviews in the 3 groups	0-4	2 (Régnier, Cardon, Masullo)
	1.2. Realisation of the interviews	4-9	2
	1.3. Results analysis, redaction of paper	6-12	2
	1.4. Redaction of papers, communication and dissemination	9-12	2
	3 Papers based on the results obtained in the 3 groups (obese, precarious and elderly)	**12**	**2**
2. Food and health : analyzing preventive behaviors			
	2.1. Health and food behaviour analysis based on consumption surveys (INCA, SECODIP), typology of health behaviours	0-6	2 (Etilé, Lhuissier)
	2.2. Health and preventive behaviour analysis based on health surveys (EPCV and Santé 2003)	6-12	2
	2.3. Qualitative survey dealing with social representations about food and health	0-12	2
	Report 1 on typology of health and food behaviours	**12**	**2**
	Report 2 based on a qualitative survey dealing with social representations about food and health	**18**	**2**
	2.4. Confrontation between food/health behaviour and representations analyses, statistical analysis	12-24	2
	2.5. Redaction of paper, communication, submission	24-36	2
	Papers submitted	**36**	**2**
3. Information, social interactions and the consumer's weight control problem			
	3.1. Data base implementation (BHPS), estimation	0-6	2 (Clark, Etilé)
	3.2. Results analysis, redaction of paper	6-12	2
	3.3. Data base implementation (Add Health), estimation	12-18	2
	Paper on "BHPS" results	**18**	**2**
	3.4. Results analysis, redaction of paper	18-24	2
	3.5. Communication and dissemination	24-36	2
	Paper on "Add Health" results	**36**	**2**
4. Nutritional labelling and food consumption decisions			
	4.1. Creation and validation of questionnaires, selection of labels and formats to be tested	0-6	5
	4.2. Sending questionnaires to subjects, entering and archiving data	6-12	5
	4.3. Cleaning and verification of files	12-14	5
	4.4. Statistical analyses, econometric analyses	14-21	5
	Report on the epidemiological approach	**21**	**5**
	4.5. Selection of a sub-set of labels and formats, implementation of interviews and focus groups	21-26	5
	4.6. Qualitative analyses, statistical analyses	26-31	5

4.7. Redaction of report, submission of papers	31-36	5	
Report on the sociological approach	**36**	**5**	
5. Nutritional claims: Nutritional claims: how do they help to follow nutritional recommendations?			
5.1. Literature review	0-6	4	
5.2. Database implementation	6-9	4	
5.3. Descriptive analysis report redaction	9-12	4	
Report on the basis of the descriptive analysis	**12**	**4**	
5.4. Econometric modelling and results	24	4	
Report on the model	**24**	**4**	
5.5. Redaction of a paper	30	4	
5.6. Submission and communication, article revised	36	4	
Final paper	**36**	**4**	
6 . Nutritional product characteristics and health risks			
6.1. Database implementation and first model estimation	0-6	2 (Allais, Etilé, Lecocq)	
6.2. Results analysis and model estimation	6-9	2	
Report on the basis of model estimation	**15**	**2**	
6.3. Article writing and communication	9-18	2	
6.4. Revision, final paper	18-24	2	
Final paper	**24**	**24**	
7. Nutrients as characteristics of food demand			
		2 (Caillavet, Chaieb, Lecocq, Nichele)	
7.1. Review of literature and database implementation	0-9	2	
7.2. Elaboration of the model and first estimations	9-18	2	
Report on the model	**14**		
7.3. Applications and first discussion paper	18-27	2	
Report on first estimations	**24**	**2**	
7.4.Final paper writing and submission	27-36	2	
Final paper	**36**	**2**	

TABLEAU DE SYNTHESE des LIVRABLES et des JALONS
(Synthetic table of the deliverables and milestones)

WP2a and WP2b

Tâche (Task)	Intitulé et nature des livrables et des jalons (deliverables and milestones)	Date de fourniture ***nombre de mois à compter de T0 calendar (month of delivery T0)***	Partenaire responsable du livrable/jalon (Partner in charge)
1. Nutrient profiles as indicators of the contribution of each food to the nutritional quality of diet			
	1.1. Food scoring from the INCA database by the SAIN-LIM system	0-6	6
	1.2. Goal programming of diets consumed by each INCA and observation of food changes between observed and optimized diets	6-12	6
	Report on food scoring and goal programming	**12**	**6**
	1.3. Integration of nutrient profiling in food process design in collaboration with Task 2	4-24	6 with 7
	Report on the integration of the nutrient profile in food processing	**24**	**6**
	1.4. Statistical analysis comparison between food scoring and diet modelling	12-18	6
	1.5. Redaction of report and first drafts of papers, oral and poster communications	18-24	6
	1.6. Revision papers and final versions	24-36	6
	Final papers	**36**	**6**
2. Nutritional optimization of food under technological, sensorial and economical constraints			
	2.1. Elaboration of DISP dynamic model for evolution analysis of nutrient profile during processing	0-8	7, 6
	2.2. Adaptation of thermal operation dynamic model for evolution analysis of nutrient profile during processing	6-10	7
	2.3. Adaptation of frying dynamic model for evolution analysis of nutrient profile during processing	8-12	7
	2.4. Optimisation approach for each of the unit operation (DISP, thermal, frying processing)	12-14	7, 6
	Report on the optimisation methodology	**14**	**7**
	2.5. Step by step method for modelling nutrient profile, sensory and other properties during cooking and chosen composite food	12-17	7, 6
	2.6. Dynamic model for evolution of nutrient profile during processing	17-20	7, 6
	2.7. Optimisation results performed under constraints	17-20	7, 6, 1
	2.8. Cost optimisation results performed under constraints for nutrient profile (joint task with Partner 1 and 6)	20-24	7, 6, 1
	Report on optimisation results	**24**	**7**
	2.9. Peer review publication	24-36	7
	Final papers	**36**	**7**
3. Descriptive analysis of firms' behavior related to nutritional issues			
	3.1. Selection on industrial sectors to be analysed	0-3	1
	3.2. Data collection (SECODIP, MINTEL), surveys (processors and retailers)	3-9	1
	3.3. Data and surveys analysis	9-12	1

	Report on the market segmentation and industrial organisation of selected sectors	**12**	**1**
	3.4. Analysis of impacts of nutritional quality improvements on the current segmentation and market	12-18	1
	Report on the variables to take into account in the economic models for tasks 4 and 5	**18**	**1**
4. Efficiency conditions of voluntary agreements			
	4.1. Analysis of the public authority intervention implemented in France in favour of voluntary agreements	6-12	1
	4.2. Interviews of firms (and professional sectors) who accepted and rejected to commit in voluntary agreements	6-12	1
	Report on voluntary agreements implemented in PNNS2	**12**	**1**
	4.3. Review of the economic literature dealing with voluntary agreement analysis	9-15	1
	4.4. Designing an economic model for voluntary agreement evaluation applied to nutritional commitments - Formalization of a nutritional cost function in relation to WP2a tasks - Formalization of a function of demand taking into account nutritional issues in relation to WP1 and WP3	12-18	1,
	4.5. Analysis and interpretation of the results, redaction of a paper	18-24	1
	Report on the economic model	**24**	**1**
	4.6. Confrontation of the results with the WP2a analyses, revision of the paper	24-36	
		30-36	
	Final papers	**36**	**1**
5. Comparative analysis of taxation and standardization on firms' decisions related to food characteristics			
	5.1. Literature review on public policy instruments dealing with product characteristics (safety, quality...)	12-14	1
	5.2. Empirical analysis of the effects of taxes based on ingredient/nutrient contents in collaboration with WP2a	14-24	1, 7, 6
	Report on ingredient/nutrient price effects on the food characteristics (collaboration with WP2a)	**24**	**1**
	5.3. Designing an economic model for taxes/standardization effects evaluation	20-26	1
	5.4. Analysis and interpretation of the results, redaction of a paper	26-30	1
	Report on the economic model	**30**	**1**
	5.5. Confrontation of the results with the WP2a analyses	26-30	
	5.6. Final redaction of the paper	30-36	
	Final paper	**36**	**1**

ANR

TABLEAU DE SYNTHESE des LIVRABLES et des JALONS
(Synthetic table of the deliverables and milestones)

WP3

Tâche (Task)	Intitulé et nature des livrables et des jalons (deliverables and milestones)	Date de fourniture *nombre de mois à compter de T0 calendar (month of delivery T0)*	Partenaire responsable du livrable/jalon (Partner in charge)
1. Design and validation of an experimental setting			
	1.1. Development of the experimental protocol and completion of the basic version used to test price policy applied low-revenue population as part of PolNutrition	0-6	3
	1.2. Development of the scoring system in collaboration with the nutritionists.	0-6	3
	1.3. Development of informational policies. Identification of the population targeted and determination of the recruitment process.	6-9	3
	1.4 Elaboration of the experimental psychology precept.	9-12	3
	Workshop that gathers psychology and economy experimentalists in order to determine the best protocols that will permit the food changes observation in neuroscience.	**12**	**3**
	1.5. Running of experiments that aim at validating the setting	12-15	3
	1.6. Implementation of strictly neuropsychological experiments.	15-24	3
	Report on psychological experiments	**24**	**3**
	.1.7. Papers writing on the experimental device	24-30	3
	Paper on experimental device and communications	**36**	**3**
2. Analysis of impacts of various policy-mix			
	2.1. Definition (1) of the nutritional policies (policy-mix scenarios) to be tested in collaboration with WP2 and WP1.	12-14	3
	List 1 of scenarios to be tested	**14**	**3**
	2.2. Running of the first experiments with Policy-mix	12-18	3
	2.3. Definition (2) of the nutritional policies (policy-mix scenarios) to be tested in collaboration with WP2 and WP1.	18-20	3
	List 2 of scenarios to be tested	**14**	**3**
	2.4. Running of experiments with Policy-mix	20-26	3
	Report on experiments	**26**	**3**
	2.5. Analysis of the Data	26-30	3
	2.6.Papers writing, presentation and submissions	30-36	3
	Papers on the results of policy-mix scenarios analysis	**36**	**3**

TABLEAU DE SYNTHESE des LIVRABLES et des JALONS (Synthetic table of the deliverables and milestones)			
Tâche (Task)	Intitulé et nature des livrables et des jalons (deliverables and milestones)	Date de fourniture ***nombre de mois à compter de T0 calendar (month of delivery T0)***	Partenaire responsable du livrable/jalon (Partner in charge)
Coordination à adapter en fonction de la durée du projet (coordination of the project)			
	Rapport d'avancement n°1 (report n°1)	6	coordinateur
	Rapport d'avancement n°2 + relevé des dépenses	12	coordinateur
	Copie de l'accord de consortium i projet partenarial	12	coordinateur
	Rapport d'avancement n°3	18	coordinateur
	Rapport d'avancement n°4 + relevé des dépenses	24	coordinateur
	Rapport d'avancement n°5	30	coordinateur
	Rapport d'avancement n°6 + relevé des dépenses	36	coordinateur
	Rapport de synthèse + récapitulatif des dépenses	36	coordinateur

6 - PROPRIETE INTELLECTUELLE / *INTELLECTUAL PROPERTY RIGHTS (IPR)*
(½ page maximum)

Donner les principes de l'accord de consortium qui sera mis en œuvre entre les partenaires du projet si le projet est retenu (propriété industrielle, exploitation des résultats, publications).

7 - AUTRES PROGRAMMES dont EUROPEENS / LINKS TO *OTHER PROGRAMS INCLUDING EUROPEAN ONES*

Nommer les équipes impliquées dans d'autres programmes sur le même sujet, dont européens, préciser le programme, le projet, le montant de l'aide accordée et l'année.

PARTICIPATIONS A DES PROJETS EN COURS

Projet PRA (2005-2007) coordonné par P. Combris et C. Esnouf (INRA) : «Influence de l'information et des caractéristiques des produits sur les choix alimentaires : mise au point de nouvelles méthodologies pour relier les expériences de terrain et les expériences de laboratoire »

Projet ANR Blanc NACRE (« New Approaches to Consumer Resistance.»), plus particulièrement en charge de la contribution « Allégations nutritionnelles : entre résistance des consommateurs et incompréhension »

Projet « Coût et efficacité nutritionnelle des recommandations diététiques du Programme National Nutrition Santé", financé par l'INPES (Institut National de Prévention et d'Education à la Santé) en 2006-2007.

Projet ANR 2006-2008 POLNUTRITION (Politiques nutritionnelles, régulation des filières alimentaires et consommation) coordonné par P. Bontems (MAIA/INRA, Toulouse).

Projet Européen 2007-2009 de type CA (Coordination Actions) "EURO-PREVOB" (Pour la prise en compte des déterminants sociaux et économique de la nutrition et de l'activité physique dans la prévention de l'obésité en Europe), coordonné par la London School of Hygiene and Tropical Medicine.

Projet ANR 2006-2008 COMPALIMAGE (Comportements alimentaires et qualité du vieillissement) coordonné par S. Hercberg (UMR INRA/INSERM, CRNH Ile de France).

Agence Nationale de la Recherche

ANR

Workpackage à adapter en fonction du nombre de partenaires et durée/ Human resources Gantt Chart
(to be completed)

	Homme.mois du partenaire Partners'persons months											Durée / chemin critique duration / critical path																											
												Année 1 /1st year												Année 2/ 2nd year												Année 3/ 3rd year			
	1	2	3	4	5	6	7				Total	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Work package 1																																															
Task 1.1		23									23																																				
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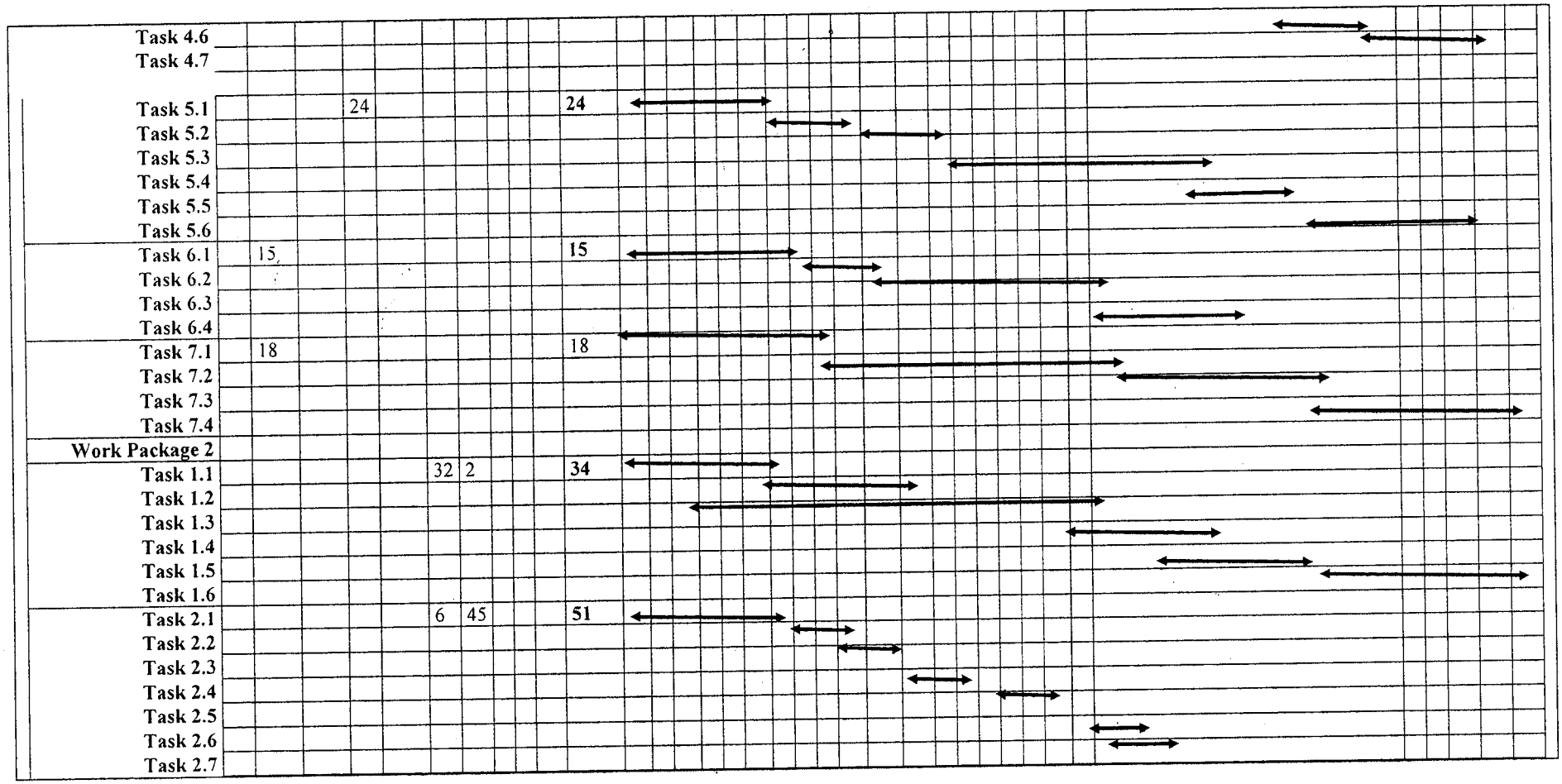
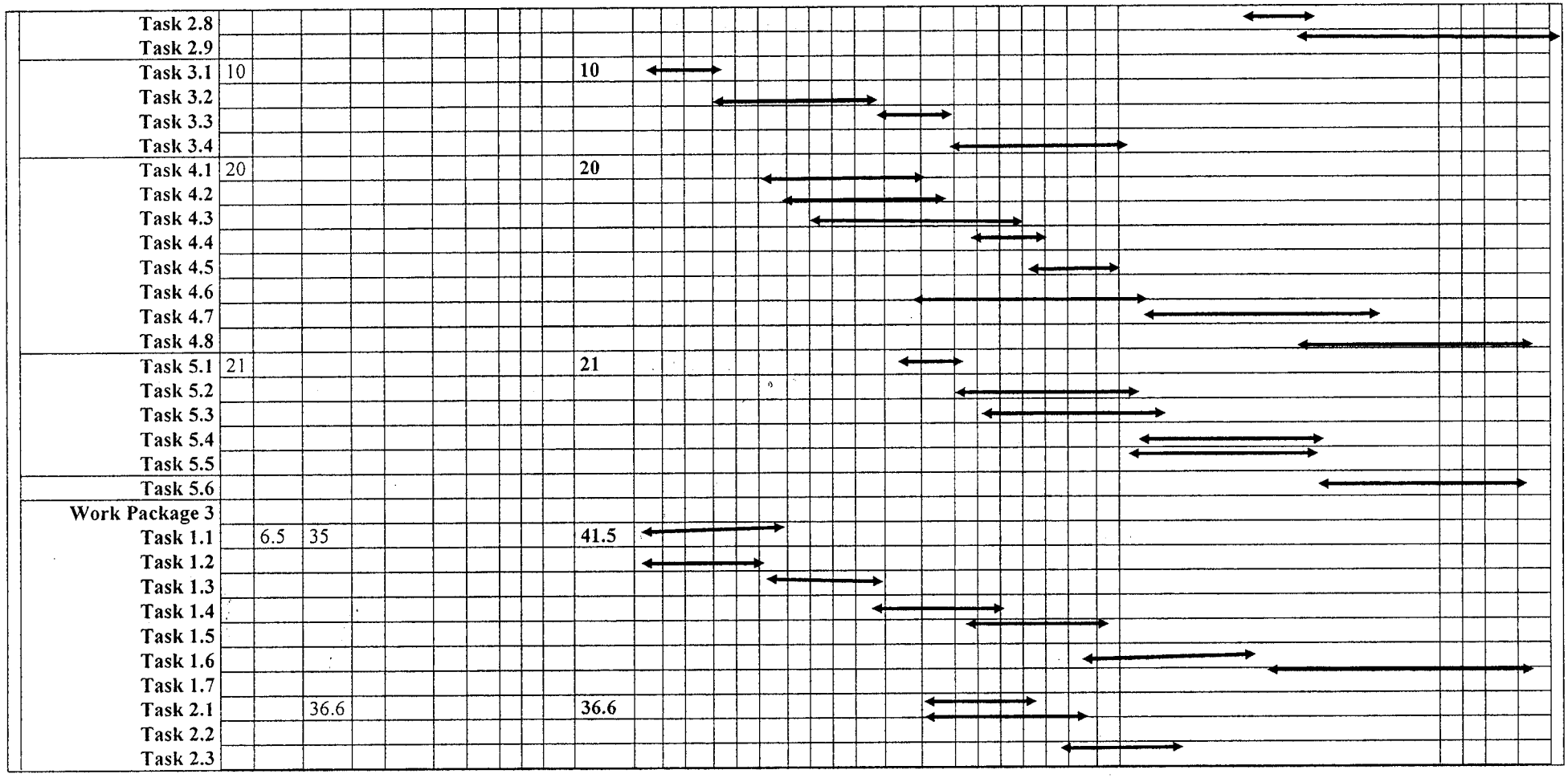
Task 3.5																																															
Task 4.1					72.6						72.6																																				
Task 4.2																																															
Task 4.3																																															
Task 4.4																																															
Task 4.5																																															


Task 4.6
Task 4.7
Task 5.1
Task 5.2
Task 5.3
Task 5.4
Task 5.5
Task 5.6
Task 6.1
Task 6.2
Task 6.3
Task 6.4
Task 7.1
Task 7.2
Task 7.3
Task 7.4
Work Package 2
Task 1.1
Task 1.2
Task 1.3
Task 1.4
Task 1.5
Task 1.6
Task 2.1
Task 2.2
Task 2.3
Task 2.4
Task 2.5
Task 2.6
Task 2.7
24
24
15
15
18
18
32
2
34
6
45
51

Agence Nationale de la Recherche

ANR

Task 2.8					
Task 2.9					
Task 3.1	10			**10**	
Task 3.2					
Task 3.3					
Task 3.4					
Task 4.1	20			**20**	
Task 4.2					
Task 4.3					
Task 4.4					
Task 4.5					
Task 4.6					
Task 4.7					
Task 4.8					
Task 5.1	21			**21**	
Task 5.2					
Task 5.3					
Task 5.4					
Task 5.5					
Task 5.6					
Work Package 3					
Task 1.1		6.5	35	**41.5**	
Task 1.2					
Task 1.3					
Task 1.4					
Task 1.5					
Task 1.6					
Task 1.7					
Task 2.1			36.6	**36.6**	
Task 2.2					
Task 2.3					



Task 2.4										
Task 2.5										
Task 2.6										
TOTAL Homme.mois Man.month	**51**	**92.5**	**71.6**	**24**	**72.6**	**38**	**47**			**396.7**
in year 1										
in year 2										
in year 3										

☺ **Meeting and reports**

Total hommes.mois	51	92,5	71,6	24	72,6	38	47
Year 1	18	35	23	9	25	13	18
Year 2	20	35	26	9	28	17	18
Year 3	13	22,5	22,6	6	19,6	8	11

JUSTIFICATION DES MOYENS HUMAINS ET FINANCIERS DEMANDES/
RATIONALE OF THE REQUESTED STAFF AND FINANCIAL SUPPORT

Justification scientifique des principaux moyens demandés pour ***chacun des partenaires impliqués*** *dans le projet, en distinguant les demandes en équipement, fonctionnement, personnels, frais de mission, prestations de services.*
Pour le personnel temporaire recruté pour le projet, indiquer le nombre de personnes à recruter, la durée prévue du (des) contrat(s), le niveau/catégorie de recrutement et le type de contrat. Le personnel non permanent à recruter ne pourra représenter qu'une part limitée du total des ressources humaines affectées au projet. En tout état de cause, le nombre de mois de CDD devra être inférieur au nombre de mois de personnel permanent affectés au projet.
Les demandes d'aide pour lesquelles les dépenses de personnel temporaire à recruter spécifiquement pour le projet seraient supérieures à 50% du montant total demandé devront être particulièrement justifiées.
Les demandes de fonctionnement sont à justifier globalement par grands domaines (verrerie, achat d'animaux, petits matériels, etc). Les frais de mission, s'ils dépassent 5 % du montant demandé, doivent alors être justifiés précisément.
Les prestations de service sont limitées à 50% du coût global entrant dans l'assiette de l'aide pour un partenaire donné, sauf dérogation accordée par le Directeur de l'ANR sur demande motivée dûment justifiée : à préciser ici, le cas échéant.
Dans le cas où une part du soutien demandé au programme PNRA (poste « dépenses de personnel temporaire ») est destinée au recrutement d'un (ou plusieurs) doctorant (s) par le biais d'un CDD, justifier la durée envisagée pour ce CDD et expliquer comment le sujet s'inscrit dans le projet.
Le contrat à durée déterminée éventuellement financé dans le cadre du projet par l'ANR ne préjuge en rien de l'autorisation d'inscription en thèse qui est du ressort de l'Ecole Doctorale.

Partenaire 1 : justification des moyens...
Partenaire 2 : justification des moyens....
...
Partenaire n : justification des moyens...

NB : Times new roman 12 ou Arial 10

BUDGET

Récapitulatif des moyens humains / Human ressources						
Partenaire	Statut partenaire (Privé / public)	Nb mois cadre statutaire	Nb mois personnel technique statutaire	Nb mois cadre non statutaire	Nb mois personnel technique non statutaire	Total M/m
P1	PUBLIC	51,0	0,0	0,0	0,0	51,0
P2	PUBLIC	69,5	0,0	13,0	10,0	92,5
P3	PUBLIC	57,6	0,0	14,0	0,0	71,6
P4	PUBLIC	15,0	0,0	0,0	9,0	24,0
P5	PUBLIC	55,6	0,0	17,0	0,0	72,6
P6	PUBLIC	24,0	0,0	14,0	0,0	38,0
P7	PUBLIC	25,0	10,0	12,0	0,0	47,0
Total	0,0	297,7	10,0	70,0	19,0	396,7

BUDGET PREVISIONNEL ESTIMATIF EN COUT COMPLET							
Partenaire	Dépenses de personnel titulaire [1]		Dépenses de personnel temporaire [1]		Fonctionnement [2] [3]	Equipement [2] [4]	Total
	Cadre	Non cadre	Cadre	Non cadre			
P1	293 967,00 €	0,00 €	0,00 €	0,00 €	58 556,80 €	0,00 €	352 523,80 €
P2	382 371,71 €	0,00 €	41 792,83 €	20 833,33 €	40 587,40 €	0,00 €	485 585,28 €
P3	282 642,60 €	0,00 €	45 000,00 €	0,00 €	52 624,00 €	0,00 €	380 266,60 €
P4	82 838,00 €	0,00 €	0,00 €	6 000,00 €	44 555,00 €	0,00 €	133 393,00 €
P5	263 418,43 €	0,00 €	55 958,33 €	0,00 €	223 039,00 €	0,00 €	542 415,77 €
P6	110 332,00 €	0,00 €	42 000,00 €	0,00 €	12 409,32 €	0,00 €	164 741,32 €
P7	152 952,08 €	37 820,00 €	40 000,00 €	0,00 €	33 966,40 €	0,00 €	264 738,48 €
Total	1 568 521,83 €	37 820,00 €	224 751,17 €	26 833,33 €	465 737,92 €	0,00 €	2 323 664,25 €

ANR

FINANCEMENT DEMANDE à l'ANR (exprimé en euro)						
Partenaire	Dépenses de personnel titulaire (1)		Dépenses de personnel temporaire (1)		Fonctionnement (2) (3)	Equipe
	Cadre	Non cadre	Cadre	Non cadre		
P1	0,00 €	0,00 €	0,00 €	0,00 €	57 404,67 €	0,
P2	0,00 €	0,00 €	41 792,83 €	20 833,33 €	40 367,70 €	0,
P3	0,00 €	0,00 €	45 000,00 €	0,00 €	56 528,96 €	0,
P4	0,00 €	0,00 €	0,00 €	6 000,00 €	46 577,20 €	0,
P5	0,00 €	0,00 €	55 958,33 €	0,00 €	45 987,09 €	0,
P6	0,00 €	0,00 €	42 000,00 €	0,00 €	12 289,37 €	0,
P7	0,00 €	0,00 €	40 000,00 €	0,00 €	36 925,06 €	0,
Total	0,00 €	0,00 €	224 751,17 €	26 833,33 €	296 080,05 €	

(1) Dépenses de personnel y compris les charges sociales et les taxes afférentes selon le barème en vigueur dans chaque organisme ou entrepri

Partenaire 1 : Uniquement des dépenses de fonctionnement, comprenant des frais de déplacement (participation aux réunions du projet, participation à des conférences), des frais d'animation (réservation de salles pour les réunions de projet et séminaires, invitation de 2 chercheurs étrangers).
Partenaire 2 : 3 mois de CDD IE pour élaboration d'une base de données et traitements préliminaires (task 7 WP1).10 mois de thèse et 10 mois de post-doc pour la task 1 WP1 : réalisation d'enquêtes et analyses sociologiques des campagnes d'éducation et d'information nutritionnelle. Frais de déplacement et participation à colloques.
Partenaire 3 : 12 mois de post-doc pour la collaboration économistes – psychologues expérimentaux. Fonctionnement essentiellement destiné aux frais d'expérimentation. 3 mois de CDD IE pour préparation et conduite des expérimentations.
Partenaire 4 : 2 bourses de stage pour la préparation d e la base de données et premiers traitements. Contribution à l'achat de la base de données (SECODIP. Frais de déplacement et participation à colloques.
Partenaire 5 : Equipe épidémiologie : CDD IR 17 mois pour préparation et conduite des enquêtes, saisie et traitements des données (cohorte SU.VIMAX 4000 individus). Equipe sociologie : prestation de service pour la réalisation d'enquêtes directes (100 individus) et focus groupes. Frais de déplacement et participation à colloques.
Partenaire 6 : 14 mois de CDD ingénieur pour dispositif de validation du système SAIN-LIM. Frais de fonctionnement (déplacement, missions)
Partenaire 7 : 12 mois de post-doc pour la mise au point de la modélisation pour l'optimisation nutritionnelle sous contrainte de coût et sensorielle. Frais d'expérimentation.
Au TOTAL : Frais de missions = 19000 euros (3% du budget demandé). Le total des CDD est de 89 mois.hommes sur 396 mois.hommes engagés dans le projet (=45% de l'aide demandée). Les prestations de service = 8.5% du budget demandé.

CURRICULUM-VITAE

Louis-Georges Soler is senior researcher and specialized in industrial economics. He is the director of the Research Unit LORIA (Food industrial Organization) of INRA. He has been involved in many projects dealing with firms' strategies in the food chains, producers-retailers relationships, and quality and food safety regulation. He has conducted several projects in France or WP in European projects. Currently he is WP leader in the Co-Extra European project (GMO – non GMO coexistence regulation). He is the coordinator of an ANR project (Agriculture et Development Durable) dealing with the pesticide regulation in the wine sector. Since 2 years, he has been developing works in the field of Nutritional Policies. He is involved in the ANR Project POLNUTRITION coordinated by P. Bontemps (GREMAQ-INRA Toulouse). In this framework, he began investigations related to food regulation according to public health goals.

He is also deeply involved in expertise in relation with French public authorities. He participated as an expert to the group who implemented the new partnership between public authorities and firms. He is in charge, with other colleagues, of the design of an "Observatory of Food Quality", which is an important tool to support the implantation of voluntary agreements. The participation to this process gives him a good vision of the stakes linked to food regulation and health, and of the difficulties of such a regulation.

The main research projects in which he is already involved will finish in 2008. He will be available for the project animation and coordination needed by the new project.

POSITION

Research Director at INRA (Social Sciences, Agriculture and Food, Space and Environment Department)
Director of LORIA Research Unit (Food Industrial Organization Research Unit) at Ivry sur Seine

PAST POSITIONS

Research Director (Economics and Sociology Department, INRA), 1994-today
Director of GENEPI Research Unit (Management and Decision-Making Models), Versailles-Grignon, 1994-1998
Associate Researcher of CGS - Scientific Management Research Center (Ecole des Mines, Paris), 1992-2000.

RECENT PUBLICATIONS

Giraud-Héraud, E., Rouached, L., Soler, L.G, *(2006)* How to restore consumer's trust after the mad cow crisis?, *Quantitative Marketing and Economics.*

Hovelaque V., Soler L.G., Hafsa Sarra, (2006), Supply chain organization and e-commerce: a model to analyze store-picking, warehouse-picking and drop-shipping, *4OR-Quarterly Journal of Operations Research.*

Bazoche, P., Giraud-Héraud, E., Soler, L.G., Premium Private Labels, Supply Contracts, Market Segmentation, and Spot Prices (2005), *Journal of Agricultural & Food Industrial Organization, 2005,* vol.3, n°1, Article 7.

Codron, J.M., Grunert K., Giraud-Héraud, E., Soler, L.G., Regmi A., Retail Sector Responses to Changing Consumer Preferences: The European Experience, (2005), In : Regmi, A. ; Gehlhar M. (eds), New Directions in Global Food Markets, USDA, *Agriculture Information Bulletin,* février *2005,* n°794, 81p., partie 3, 15 p.

Codron, J.M., Giraud-Héraud, E., Soler, L.G., (2005) Minimum quality standards, premium private labels, and European meat and fresh produce retailing, *Food Policy.*

Soler, L.G., Retailer Strategies in the Food Marketing Chain: Introduction to the Special Issue, (2005), *Journal of Agricultural & Food Industrial Organization, 2005,* Vol.3, n°1, Article 1.

Giraud-Héraud, E., Mathurin, J., Soler, L.G. (2003), "Quelle légitimité à des mécanismes de régulation de l'offre dans les Appellations d'Origine Protégée ? », *Economie Rurale*, octobre 2003.

(De) Fontguyon, G., Giraud-Héraud, E., Rouached, L., Soler, L.G. (2003), "Qualité des Produits et Marques de Filières", *Sociologie du Travail*, vol. 45, n°1, pp 77-94.

Conferences and seminars

Giraud-Héraud, E., Hammoudi H., Soler, L.G., (2005), Collective Standards and Food safety, Seminar INRA-IDEI, December 2005, INRA-IDEI Toulouse

Giraud-Héraud, E., Hammoudi H., Soler, L.G., Retailers' coalition, Intermediary Markets and Food Safety Control (2005), 11th Conference of European Association of Agricultural Economists, Copenhagen, 20 p.

Rim Lamandhi-Ayed, Lamia Rouached, Soler, L.G, (2005), Promotions with perishable products, World Marketing Conference, Germany.

Bazoche P., E. Giraud-Héraud, Soler, L.G., (2004), Premium Private Labels, Shelf Space Segmentation and Vertical Contracts, 88th EAAE seminar "Retailing and Producer-Retailer Relationships in the Food Chains", Paris.

Codron, J.M., Giraud-Héraud, E., Soler, L.G., (2003) French large scale retailers and new supply segmentation strategies for fresh products, USDA/ERS, Workshop : Global markets for high-value foods, Washington, 14 février 2003, 14 p.

ANNEXE 3

Modèle de reporting scientifique

Rapport d'avancement scientifique
PNRA EDITION 2007

1. *Identification du projet*

Acronyme du projet :
N° Projet :

LIBELLE COMPLET DU PROJET

Coordonnateur (rédacteur de ce rapport) : nom prénom
Mail : Tel :

Durée du projet :
Date de début du projet : Date de fin du projet :

Equipes Bénéficiaires : ***(celles de l'annexe technique, y compris pour des aides inférieures à 15 k€)***

Equipe N°	Nom Prénom du responsable scientifique de l'équipe	Organisme et unité* d'appartenance	Code postal / Ville
1			
2			
3			
4			
5			

*** pour les UMR citer toutes les tutelles**

Insérer ici le barchart (calendrier des travaux avec répartition des tâches et identification des délivrables) ou bien un document de ce type

2. *Résumé du projet*

Insérer celui de l'annexe technique

3. *Etat d'avancement par semestre* *(à compléter sur le même document chaque semestre)*

SEMESTRE 1 *(1er janvier 2008 - 30 juin 2008)*

Tableau des taches et des délivrables du projet : Indiquez dans ce tableau, à la fin du semestre concerné, si les délivrables prévus dans le barchart ont été réalisés, reportés ou réorientés. Merci d'être synthétique dans ce tableau et de détailler les résultats et délivrables dans la partie B ci-dessous.

Délivrables obtenus sur ler semestre écoulé	2008		2009		2010		Commentaires
	S1	S2	S1	S2	S1	S2	
Ex : Accord de consortium	15/06/08		*	*	*	*	
...							
...							
...							

*indiquez les dates d'obtention des différents délivrables

A - DESCRIPTION DES TRAVAUX EFFECTUES ET CONFORMITE DE L'AVANCEMENT AUX PREVISIONS, PRINCIPAUX FAITS MARQUANTS, DIFFICULTES RENCONTREES ET SOLUTIONS DE REMPLACEMENT ENVISAGEES

- Objectif(s) prévu(s)[1]/objectif(s) réalisé(s).
- Ecart éventuel prévu-réalisé : expliciter les causes
- Principaux faits marquants du semestre y compris les difficultés éventuelles rencontrées et actions envisagées/engagées pour les surmonter (1 page)
- Actions de coordination du projet (séminaires, groupes de travail, réunions transversales, outils d'interface).
- Perspectives semestre suivant (poursuite des objectifs ou éventuelle réorientation proposée)

B - DELIVRABLES ET RESULTATS OBTENUS

- Résultats et délivrables obtenus pour la période concernée et indiqués dans le tableau ci-dessus. Ces délivrables doivent êtredéclinés par tâches et Workpackage ou sous-projets, avec pour chacun la contribution des équipes impliquées - 1 page max/sous-projets).
- Publications soumises ou acceptées, brevets.

C – AUTRES COMMENTAIRES : Aspects non scientifiques

Le cas échéant, liste des CDD recrutés dans le cadre du projet :

Unité d'accueil	Nom	Prénom	Niveau de recrutement	Date de recrutement	Durée du contrat (en mois)
	...				
	...				

Commentaires particuliers du coordonnateur

SEMESTRE 2 *(1er juillet 2008 – 31 décembre 2008)*

[1] [2] Tel que figurant dans l'annexe technique de la décision ou convention d'aide

Tableau des taches et des délivrables du projet : Indiquez dans ce tableau, à la fin du semestre concerné, si les délivrables prévus dans le barchart ont été réalisés, reportés ou réorientés. Merci de détailler les raisons dans le texte ci-dessous.

Délivrables obtenus sur ler semestre écoulé	2008		2009		2010		Commentaires
	S1	S2	S1	S2	S1	S2	
Ex : résultats							
publications,							
colloques							
outils							

*indiquez les dates d'obtention des différents délivrables

A - DESCRIPTION DES TRAVAUX EFFECTUES ET CONFORMITE DE L'AVANCEMENT AUX PREVISIONS, PRINCIPAUX FAITS MARQUANTS, DIFFICULTES RENCONTREES ET SOLUTIONS DE REMPLACEMENT ENVISAGEES

- Objectif(s) prévu(s)[2]/objectif(s) réalisé(s).
- Ecart éventuel prévu-réalisé : expliciter les causes
- Principaux faits marquants du semestre y compris les difficultés éventuelles rencontrées et actions envisagées/engagées pour les surmonter (1 page)
- Actions de coordination du projet (séminaires, groupes de travail, réunions transversales, outils d'interface).
- Perspectives semestre suivant (poursuite des objectifs ou éventuelle réorientation proposée)

B - DELIVRABLES ET RESULTATS OBTENUS

- Résultats et délivrables obtenus pour la période concernée (déclinés par tâches et Workpackage ou sous-projets), avec pour chacun la contribution des équipes impliquées - 1 page max/sous-projets)
- Publications soumises ou acceptées, brevets.

C – AUTRES COMMENTAIRES : Aspects non scientifiques

Le cas échéant, liste des CDD recrutés dans le cadre du projet :

Unité d'accueil	Nom	Prénom	Niveau	Date de recrutement	Durée du contrat (en mois)
	...				
	...				

[2] [2] Tel que figurant dans l'annexe technique de la décision ou convention d'aide

Etat annuel et indicatif des dépenses *(La production de ce tableau est demandée à l'issue de chaque année de réalisation du projet et non à chaque semestre afin de mettre en cohérence l'avancement des travaux et des dépenses)*

Les partenaires de statut privé devront ***également*** *fournir annuellement, à l'unité support de leur programme, une synthèse de leurs dépenses selon le modèle ci-dessous.*

PROJET ANR-07-PNRA-00X	EQUIPEMENT	FONCTIONNEMENT				TOTAL
		PERSONNEL		AUTRES DEPENSES DE FONCTIONNEMENT	PRESTATIONS DE SERVICE	
		Personnel	Déplacements			
ANR-07-XXX-00X-01						0,00
ANR-07-XXX-00X-02						0,00
ANR-07-xXX-00X-03						0,00
ANR-07-XXX-00X-04						0,00
ANR-07-XXX-00X-05						0,00
ANR-07-XXX-00X-06						0,00
ANR-07-XXX-00X-07						0,00
ANR-07-XXX-00X-08						0,00
ANR-07-XXX-00X-09						0,00
ANR-07-XXX-00X-10						0,00
ANR-07-XXX-00X-11						0,00
ANR-07-XXX-00X-12						0,00
	0,00	0,00	0,00	0,00	0,00	0,00

Merci de préciser, le cas échéant, le montant et la nature des dépenses effectuées sur les crédits mis en place au titre des pôles de compétitivité

Commentaires particuliers du coordonnateur

SEMESTRE N

Idem

ATTENTION : Lors du compte-rendu de l'avant dernier semestre du projet, Merci de préciser également les actions envisagées pour la valorisation du projet.

ANNEXE 4

Personnels non titulaires prévus pour les équipes publiques sur le projet ALIMINFO (ANR-07-PNRA-008)

Numéro de décision ANR	Niveau de qualification	Durée totale en nombre de mois	Montant des dépenses de personnels (salaires, charges sociales afférentes, indemnités de stage...) en euros
ANR-07-PNRA-008-01	-	-	-
ANR-07-PNRA-008-02	Ingénieur	3	8 700
	Doctorant	10	24 583
	Post doctorant	10	33 750
ANR-07-PNRA-008-03	Doctorant	12	40 500
	Ingénieur	2	5 000
ANR-07-PNRA-008-04	Stagiaire	3	1 200
	Stagiaire	6	4 800
ANR-07-PNRA-008-05	Ingénieur	17	57 375
ANR-07-PNRA-008-06	Ingénieur	15	43 500
ANR-07-PNRA-008-07	Post doctorant	12	40 500