Assessment of the potential impact of the nutritional commitments of food operators on French nutrient intakes

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The French Observatory of food quality (Oqali)

- Set up in 2008 as part of the French Nutrition and Health Programme 2006-2010

- Managed both by
  - The French Agency for Food, Environmental and Occupational Health & Safety (ANSES)
  - The French National Institute for Agricultural Research (INRA)

- Aims
  - To centralize, at the branded product level, nutritional data provided on labels as well as socio-economics parameters
    - **To monitor processed food quality (food supply) over time**
      - Decision tool for French Health authorities

- Collaborations with manufacturers and retailers are mandatory

- Oqali database : more than 20 000 food items of 18 different food sectors

Nutritional commitments

- French Nutrition and Health Programme (PNNS 2)
  - Food operators can sign with French Health authorities voluntary commitment charters
    - To improve the nutritional quality of their foodstuffs

Assessment of the potential cumulative impact of these improvements on consumer nutrient intakes

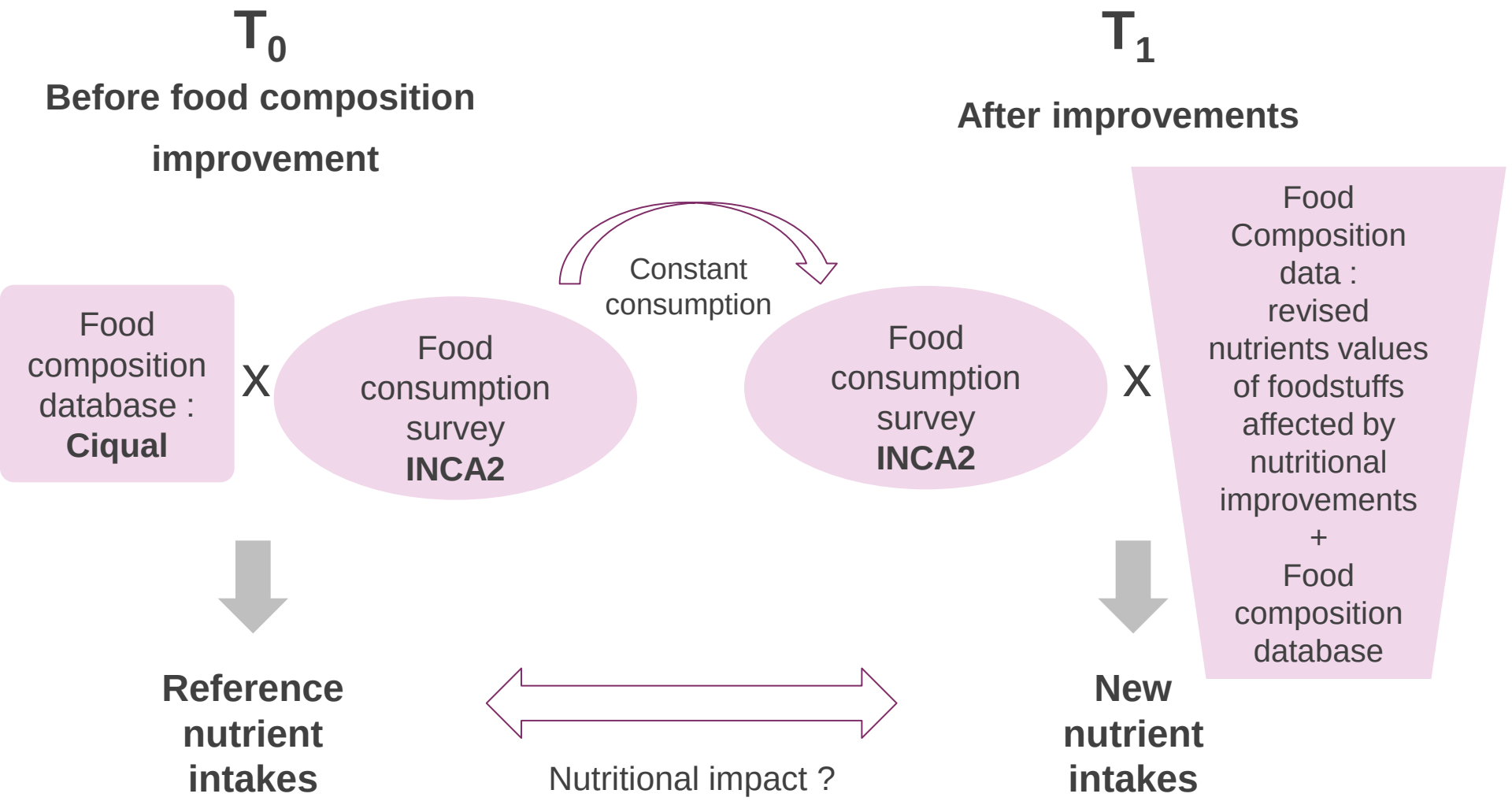
- Considering the15 commitment charters signed before February 2010

- **Coordinated classification between food consumption survey, food composition database and foodstuff concerned by a commitment**
- **Database in which the nutritional composition is available at the branded product level**

Examples of commitments

	Food concerned	Nutrient	Commitment
Food operator 1	A margarine sideline	Lipids	Reduce the content of 5 to 10%
	Slightly salted margarines	Salt	Restrict the content under 1.6%
Food operator 2	New dairy products	Added sugar	No more
	Dairy products	Vitamin D	Fortification
Food operator 3	Frozen pizzas, quiches	Dietary fiber	Increase the fiber content of pizza dough of 13% by using T80 flour instead of T55

Potential impact of the nutritional commitments



Four steps

1. Selection of measurable commitments in accordance with available data

2. Identification of relevant foodstuffs and matching with corresponding generic food of the INCA2 consumption survey classification

3. Computation of new composition data after applying corresponding commitments

4. Assessment of new nutrient intakes

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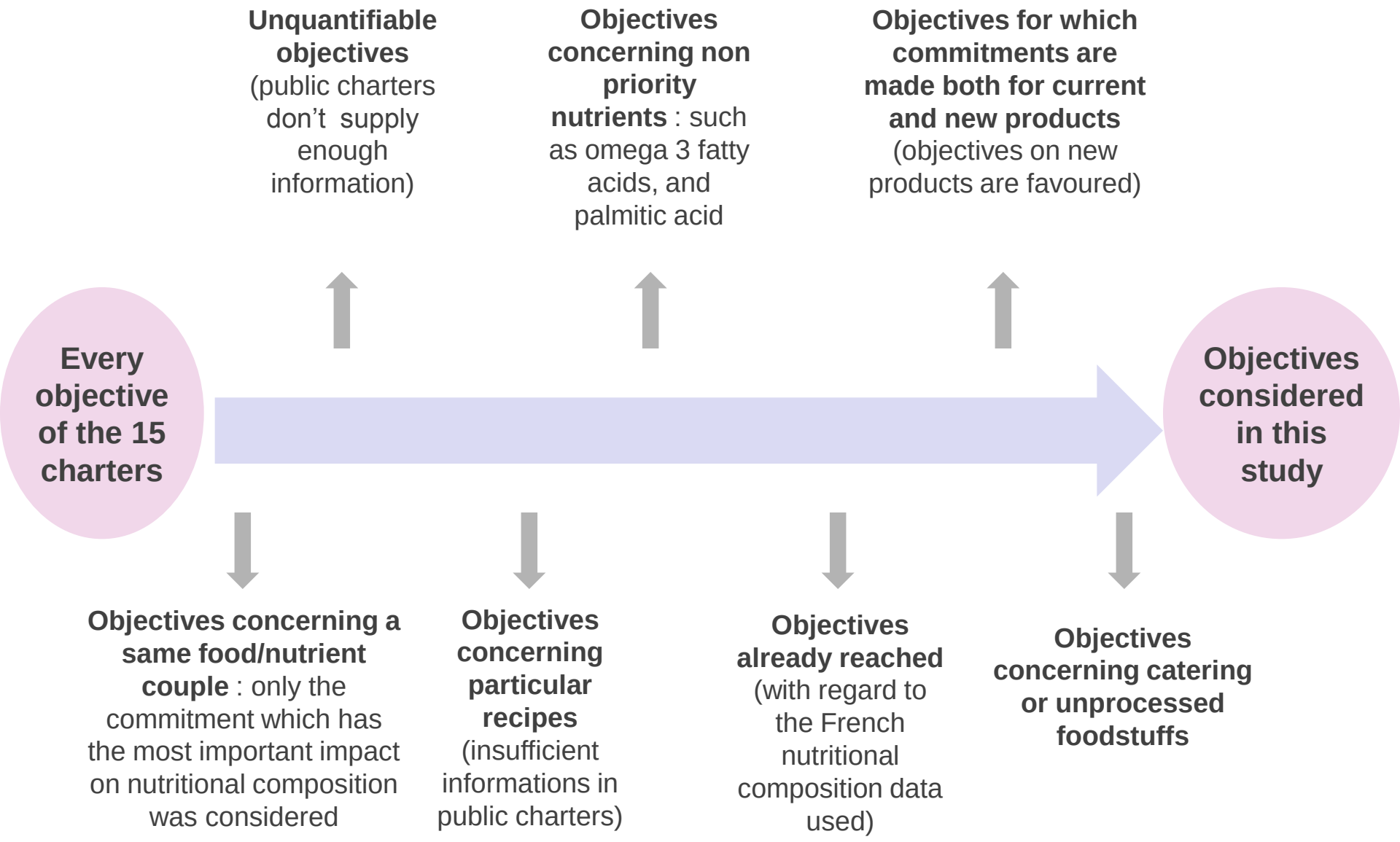
Selection of measurable commitments in accordance with available data



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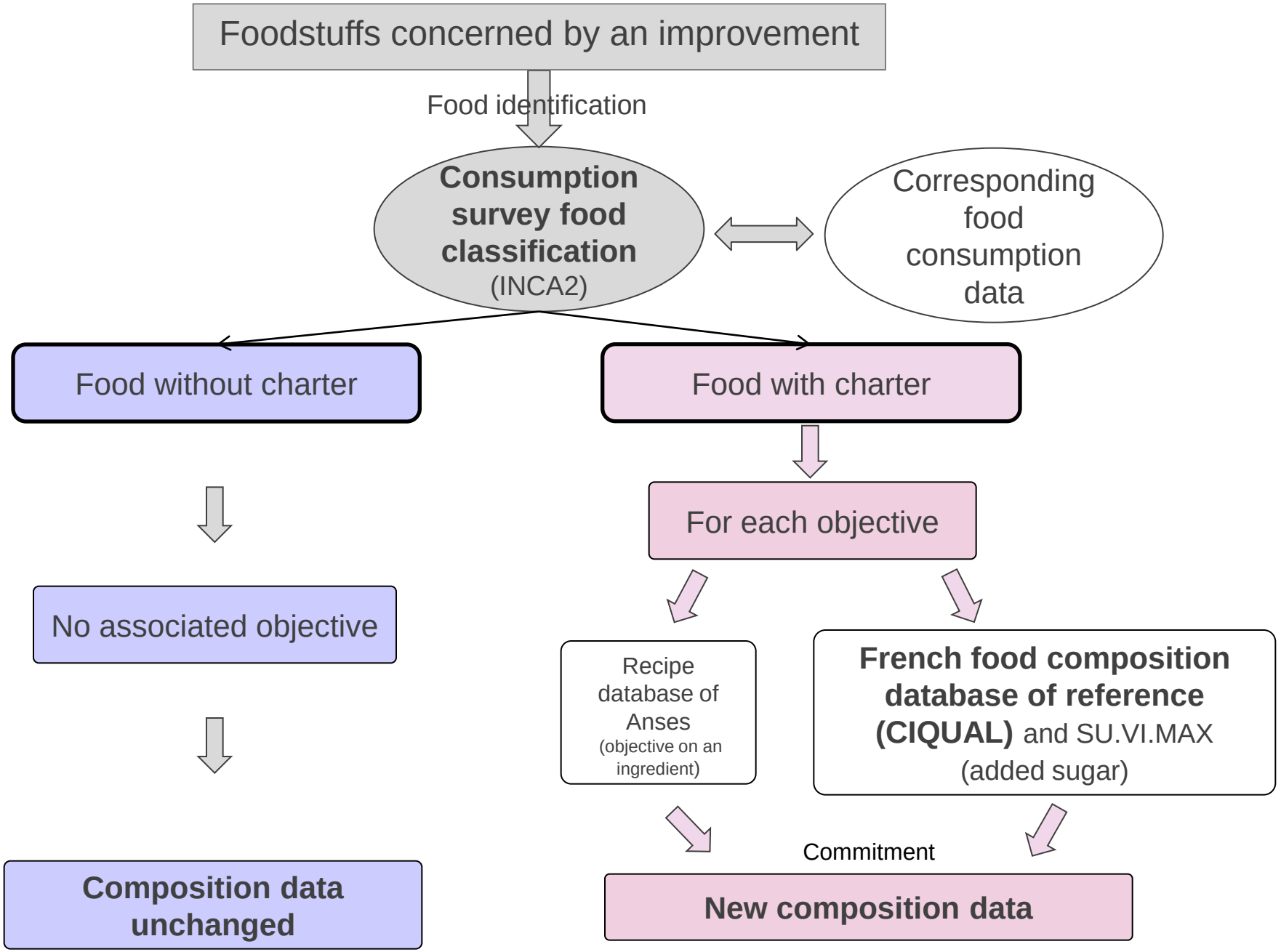
Identification of relevant foodstuff and computation of new composition data



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Methods (1 / 2)

Daily nutrient intake assessment :

- Total Average
- Average food group (consumption survey classification)

Before and after improvements

↓

3 populations

- adults (18 years and over)
- children from 3 to 10 years old
- children from 11 to 17 years old

↓

8 nutrients

sugars, dietary fiber, lipids, saturated fatty acids,
trans fatty acids, sodium, calcium, vitamin D

↓

4 hypothetical scenarios

For each product concerned by a nutritional commitment :
Variable consumption rate (100%,50%,25%,10%)
depending on the hypothetical market share of the product concerned

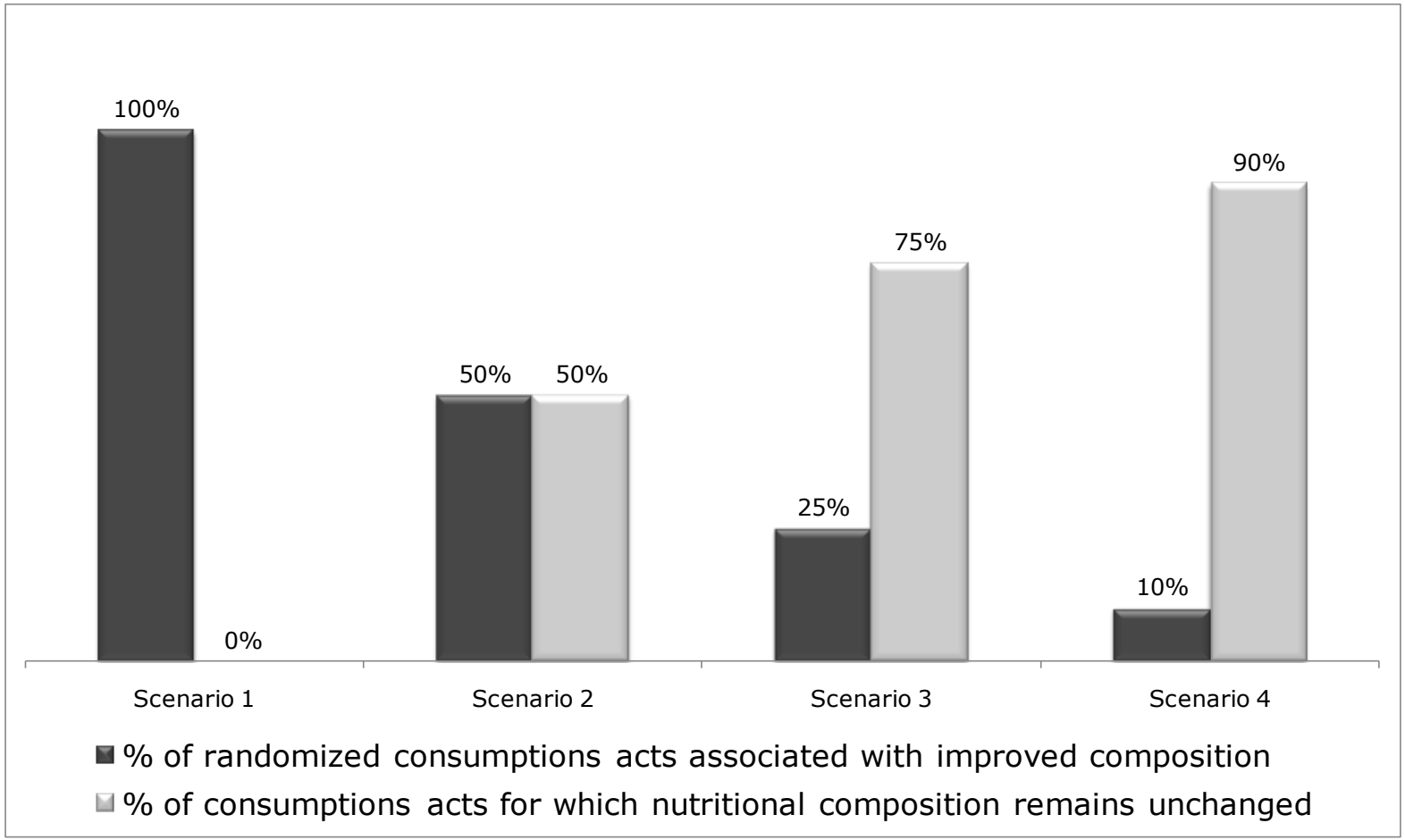
Methods (2 / 2)

- **Scenario 1 :** consumption rate : 100% **(realistic if all brands are concerned)**
  - **Systematic consumption of foodstuffs with nutritional commitments**

    People consume consistently foodstuffs concerned by voluntary commitment charters and for which the nutritional composition improvement is the most important (when several charters concern the same food product)

- **Scenario 2 :** consumption rate : 50%

  People consume half « standard » products and half products concerned by nutritional commitments



Evolution of the total average daily nutrient intakes for the 4 scenarios in adults

		BEFORE FOOD COMPOSITION IMPROVEMENT	AFTER IMPROVEMENTS			
			SCENARIO 1 100%	SCENARIO 2 50%	SCENARIO 3 25%	SCENARIO 4 10%
Nutrient	% of food concerned (% of consumption affected)++	Reference average daily nutrient intake (g/day+)	Evolution %	Evolution %	Evolution %	Evolution %
Sugars	13.9% (9.0%)	95.0	**-4.2****	**-2.1**	**-1.0**	**-0.4**
Dietary fiber	2.2% (4.8%)	17.5	**+2.3***	**+ 1.2**	**+ 0.6**	**+ 0.2**
Lipids	16.5% (8.5%)	89.3	**-2.5****	**-1.2**	**-0.6**	**-0.2**
Saturated fatty acids	2.0% (0.2%)	36.4	**- 0.2**	**-0.1**	**-0.1**	**-0.0**
***Trans* fatty acid**	3.8% (0.4%)	2.3	**-1.4**	**-0.7**	**-0.4**	**-0.1**
Sodium	13.8% (11.3%)	2967.9	**-7.8*****	**-3.9*****	**-1.9**	**-0.8**
Calcium	0.3% (0.1%)	914.0	**+ 0.1**	**+ 0.0**	**+ 0.0**	**+ 0.0**
Vitamin D	0.7% (0.7%)	2.6	**+8.3*****	**+4.1***	**+ 1.9**	**+ 0.7**

[+] average daily nutrient intakes g/day except for calcium (mg/day) ; sodium (mg/day) and vitamin D (µg/day).

[++] according to the INCA2 food consumption survey classification

***p<0,05 ; **p<0,01 ; ***p<0,001 : significant difference between reference and new nutrient intakes (according to scenario).**

➢ **Similar results for children**

Results for scenario 1 and 4 in adults : sugars and lipids

Food group concerned (INCA2 consumption survey classification)	SUGARS				LIPIDS			
	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (g/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (g/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %
Breakfast cereals	91.7% (100%)	1.2	- 9.7	-0.9				
Croissant-like pastries	100% (100%)	0.8	- 7.6	-0.7	100% (100%)	2.2	-10.0	- 1.0
Biscuits (salty and sweet) and bars	76.5% (78.2%)	2.3	- 9.4	-1.0	97.1% (100%)	1.8	-11.4	- 1.2
Pastries and cakes	26.1% (43.0%)	7.7	- 2.8	-0.2	26.1% (43.0%)	6.0	-3.5	- 0.3
Dairy products	13.1% (24.6%)	6.6	**- 9.2****	-0.8	13.1% (24.6%)	2.3	**-9.1*****	- 0.9
Sugar, jam, honey and sweets	30.4% (49.7%)	15.1	- 0.0	-0.0				
Soft drinks	93.3% (99.6%)	12.6	**-17.7****	-2.0				
Dessert, cream dessert, jellied milks	100% (100%)	4.0	- 10.2	-1.1	6.3% (6.3%)	1.4	-2.8	- 0.5
Apple sauce, fruit purées and canned fruit	90.9% (99.7%)	2.6	- 4.7	-0.4				
Foods for specific needs	6.3% (4.5%)	0.2	- 0.7	-0.0				
Margarine					100% (100%)	2.6	-10.0	- 0.9
Delicatessen meats					3.6% (3.6%)	6.9	-0.4	- 0.1
Fish					2.6% (9.4%)	1.8	-2.7	- 0.2
Potatoes					8.3% (7.6%)	1.9	-0.9	- 0.1
Sandwiches and hamburgers					20.7% (10.3%)	2.1	-0.5	- 0.0
Soups					100% (100%)	0.7	**-23.5****	- 2.0
Ready meals					97.4% (100%)	4.7	**-15.0*****	- 1.4
Condiments and sauces					33.3% (28.2%)	3.7	-1.6	- 0.1
TOTAL	**13.9% (9.0%)**	**95.0**	**-4.2****	**-0.4**	**16.5% (8.5%)**	**89.3**	**-2.5****	**-0.2**

[++] according to the INCA2 food consumption survey classification

***p<0,05 ; **p<0,01 ; ***p<0,001 : significant difference between reference and new nutrient intakes.**

Results for scenario 1 and 4 in adults : sodium and dietary fiber

	SODIUM				DIETARY FIBER			
Food group concerned (INCA2 consumption survey classification)	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (mg/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (g/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %
Bread and crispbread	80.0% (87.8%)	774.4	**-16.7*****	- 1.7	56.0% (96.7%)	3.6	**+ 9.5*****	+ 1.0
Pasta	40.0% (0.2%)	1.2	- 0.8	- 0.1				
Biscuits (salty and sweet) and bars	20.6% (21.8%)	36.1	- 7.4	- 0.7				
Delicatessen meats	27.3% (40.2%)	335.6	- 1.1	- 0.1				
Fish	2.6% (9.4%)	89.0	- 1.2	- 0.1				
Vegetables (except potatoes)	1.0% (0.8%)	103.8	- 0.6	- 0.1				
Potatoes	33.3% (11.3%)	22.4	-17.3	- 1.7				
Soft drinks	1.7% (0.2%)	6.9	- 1.3	- 0.2				
Pizzas, quiches and savoury pastries	76.2% (91.9%)	120.6	- 7.5	- 0.8	76.2% (91.9%)	0.4	+ 14.4	+ 1.5
Sandwiches and hamburgers	3.5% (11.0%)	86.9	- 0.3	- 0.0				
Soups	100% (100%)	173.2	- 13.7	- 1.4				
Ready meals	97.4% (100%)	247.0	**- 20.9*****	- 2.0				
Condiments and sauces	33.3% (28.2%)	255.7	- 1.7	- 0.2				
TOTAL	**13.8% (11.3%)**	**2967.9**	**-7.8*****	**-0.8**	**2.2% (4.8%)**	**17.5**	**+ 2.3***	**+ 0.2**

[++] according to the INCA2 food consumption survey classification

***p<0,05 ; **p<0,01 ; ***p<0,001 : significant difference between reference and new nutrient intakes.**

Results for scenario 1 and 4 in adults : *trans* and saturated fatty acids, calcium, vitamin D

Food group concerned (INCA2 consumption survey classification)	*TRANS* FATTY ACIDS				SATURATED FATTY ACIDS			
	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (g/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (g/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %
Bread and crispbread	4% (0.5%)	0.03	**-18.7**	**- 1.5**				
Croissant-like pastries	16.7% (14.3%)	0.08	**-6.7**	**- 1.0**				
Biscuits (salty and sweet) and	2.9% (0.5%)	0.04	**-0.2**	**- 0.0**				
Pastries and cakes	4.4% (8.1%)	0.18	**-4.6**	**- 0.3**				
Oil	51.6% (14.9%)	0.02	**- 8.0**	**- 0.8**				
Margarine	88.9% (92.0%)	0.03	**-26.8**	**- 2.3**	100% (100%)	0.8	**-10.0**	**-0.9**
Pizzas. quiches and savoury pastries	9.5% (2.7%)	0.07	**- 3.2**	**- 0.4**				
Ready meals	3.9% (0.2%)	0.26	**-0.6**	**- 0.0**				
TOTAL	**3.8% (0.4%)**	**2.3**	**-1.4**	**-0.1**	**2.0% (0.2%)**	**36.4**	**- 0.2**	**-0.0**

Food group concerned (INCA2 consumption survey classification)	CALCIUM				VITAMIN D			
	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (mg/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %	% of food concerned (% of consumption affected)[++]	Reference average daily nutrient intake (mg/day)	SCENARIO 1 100% Evolution %	SCENARIO 4 10% Evolution %
Dairy products	3.3% (1.9%)	103.6	+ 0.0	+ 0.0	13.1% (24.6%)	0.10	**+222.2*****	+ 19.6
Dessert, cream dessert,	6.3% (6.3%)	26.1	+ 2.4	+ 0.5	3.1% (0.3%)	0.04	+ 1.9	0
TOTAL	**0.3% (0.1%)**	**914.0**	**+ 0.1**	**+ 0.0**	**0.7% (0.7%)**	**2.6**	**+ 8.3*****	**+ 0.7**

[++] according to the INCA2 food consumption survey classification

*p<0,05 ; **p<0,01 ; ***p<0,001 : significant difference between reference and new nutrient intakes.

Food group (INCA2 consumption survey classification)	Sugars	Dietary fiber	Lipids	Saturated fatty acids	*Trans* fatty acids	Sodium	Calcium	Vitamin D	TOTAL
Biscuits (salty and sweet) and bars	x		x		x	x			**4**
Bread and crispbread		**x**			x	**x**			**3**
Breakfast cereals	x								**1**
Apple sauces, fruit purées and canned fruit	x								**1**
Condiments and sauces			x			x			**2**
Croissant-like pastries	x		x		x				**3**
Dairy products	**x**		**x**				x	**x**	**4**
Dessert, cream dessert, jellied milks	x		x				x	x	**4**
Fish			x			x			**2**
Foods for specific needs	x								**1**
Margarine			x	x	x				**3**
Delicatessen meats			x			x			**2**
Soft drinks	**x**					x			**2**
Oil					x				**1**
Pasta						x			**1**
Pastries and cakes	x		x		x				**3**
Pizzas, quiches and savoury pastries		x			x	x			**3**
Potatoes			x			x			**2**
Ready meals			**x**		x	**x**			**3**
Sandwiches and hamburgers			x			x			**2**
Soups			**x**			x			**2**
Sugar, jam, honey and sweets	x								**1**
Vegetables (except potatoes)						x			**1**
TOTAL	**10**	**2**	**13**	**1**	**8**	**13**	**2**	**2**	

- ❖ 23 out of 43 food groups are concerned by at least one objective
- ❖ Depending on nutrients, different number of food groups impacted
- ❖ Significant evolution of average daily intake in adults (scenario 1)
  - ➢ **Dairy products**
    - sugars (- 9%)
    - lipids (- 9%)
    - vitamin D (+ 222%)
  - ➢ **Ready meals**
    - lipids (- 15%)
    - sodium (- 21%)
  - ➢ **Breads**
    - dietary fiber (+ 10%)
    - sodium (- 17%)
  - ➢ **Soups**
    - lipids (- 23%)
  - ➢ **Soft drinks**
    - sugars (- 18%)
- ❖ No significant variation for most of food groups
  - ➢ low number of food concerned
  - ➢ low level of the commitment

Conclusion

❖ **Even if we made many working hypotheses, when considering a year of constant consumption : interesting improvements of nutritional intakes**

❖ Interesting tool to monitor the impact of improved food composition in terms of nutrient intakes

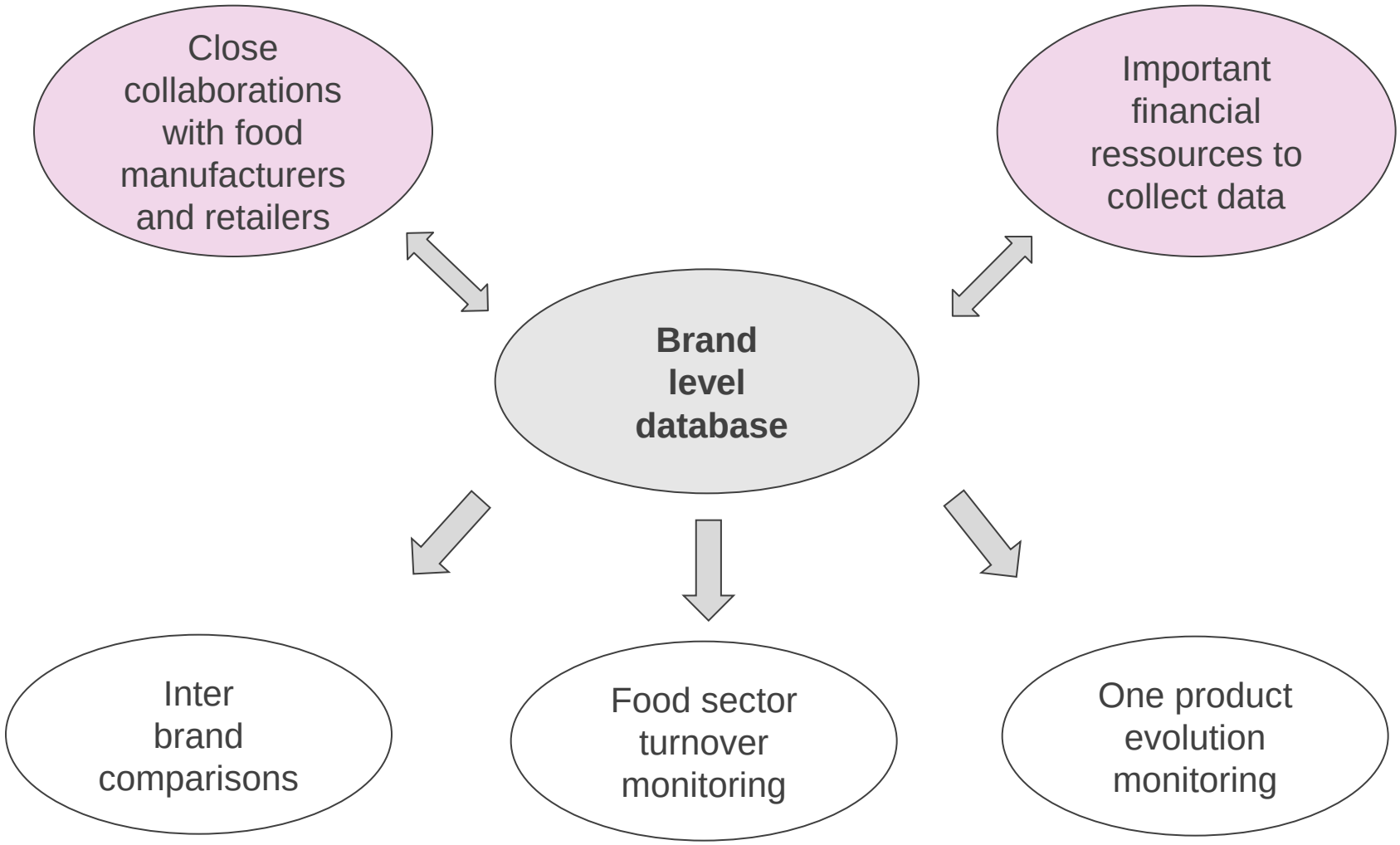
❖ Cumulative potential impact overview of voluntary nutritional commitment charters

➢ First results are being refined

- ➢ To consider the 27 voluntary commitment charters signed today
- ➢ To integrate real foodstuff market share
- ➢ To distinguish « home made » and « industrial » food
- ➢ To verify whether nutritional improvements concern all consumers, regardless of the socio-economic group they belong to.

Objective : to prompt food operators to sign voluntary commitment charters to improve food supply

Other use for a brand level database



Reports and specific surveys are on the Oqali website
http://www.oqali.fr

Thank you for your attention