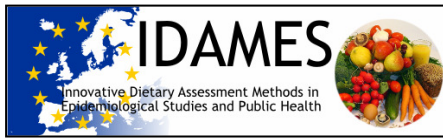


Pilotstudy: rationale and overall design

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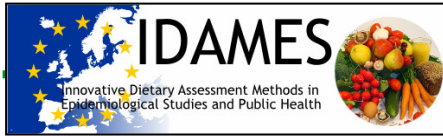
Objective of pilot study



- to provide background data for a nutritional epidemiological approach that provides **quantitative** and **precise** estimates for **usual dietary intake** of individuals
 - involve all partners in design & **prioritization** to address the most important challenges of dietary assessment in large-scale studies

Usual dietary intake of individuals is the relevant exposure for investigating the diet & disease relationship properly

- impossible to measure or be observed directly
- needs to be estimated
 - to cope with measurement errors inherent in all self-reported dietary intakes
- less burdensome & costly instruments are needed to outweigh feasibility & best estimation in large-scale studies

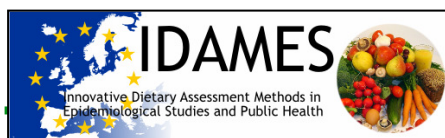


Estimation of usual intake (1)



- recent advances in estimating usual dietary intake originate from research into **population distributions** within surveys

- general strategies to generate usual intake distributions based on **multiple short-term instruments**
 - 24 hour dietary recalls (HDRs)
 - Food records
 - compensation for error due to high within-person variability
 - one single day does not reflect sufficiently usual intake



Selection of short-term instruments (1)



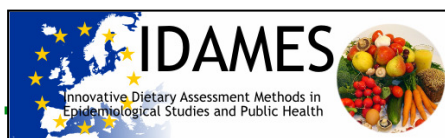
➤ main advantages:

24HDR:

- intake is quantified, detailed
- not reactive
- no literacy required, if interview-administered
- less burdensome than food record
- standardized questions, particularly advantageous for multi-centric studies

Food record:

- intake can be quantified, detailed, if weighted
- accurate
- in best case: real time assessment
- often longer time frame than 24HDR



Selection of short-term instruments (2)



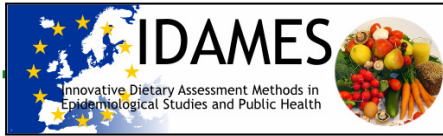
➤ main disadvantages:

24HDR:

- relies on memory
- likely to omit foods consumed infrequently
- high training of interviewers
- costly
- multiple days required to estimate usual intake distributions, at least two

Food record:

- may change usual eating patterns
- requires literacy
- time-consuming (e.g. coding)
- quality of completion worse over time
- multiple days required to estimate usual intake distributions

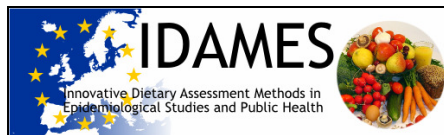


Prioritization (2)

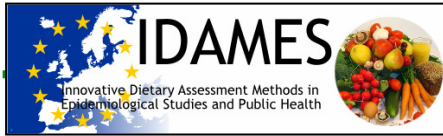


Application of three telephone-administered 24HDRs using EPIC-SOFT

- Rationale:
 - results of WP4 (review on 24HDR)
 - primary instrument for detailed & quantified information on diet
 - feasibility reasons for the multi-centric pilot-study:
 - proper instrument to assess quantitative dietary data in a standardized and feasible manner



Does averaging multiple short-term instruments adequately represent usual dietary intake?

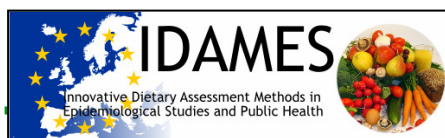


Estimation of usual intake (2)



- Challenge to simple averaging of multiple short-term instruments:
 - for foods reported with bias in short-term instruments, estimates of usual intake will be biased, in particular infrequently consumed foods

- refined statistical methods based on short-term instruments supplemented by **long-term instruments**:
 - calibration approaches
 - statistical modeling



Selection of long-term instruments (1)



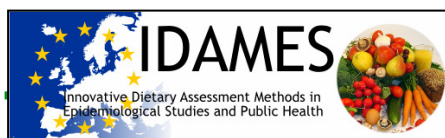
➤ FFQs/FPQs:

Main advantages:

- aim to measure usual intake with one measurement
- less burdensome & costly to administer and to process than short-term instruments
- not reactive
- source of relevant information on true non-consumers

Main disadvantages:

- measurement error
- lower accuracy
- retrospective: good rely on memory is required
- possible bias due to direct previous food intake



Selection of long-term instruments (2)



➤ Web-based, self-administered FFQ/FPQs:

higher quality of data

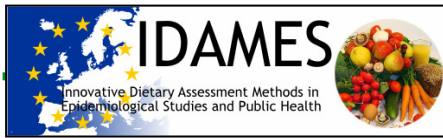
- immediate and automatic control for missing and implausible data

direct data transfer to study centre

- less costs (no costs for printing-& postage)
- less organisational constraints (no manual checks for incomplete and implausible answers & no transfer of data to an electronic format, easily adaptable)

higher compliance

- completion any time & location, reminder messages, personalized feed-back, interactive help features



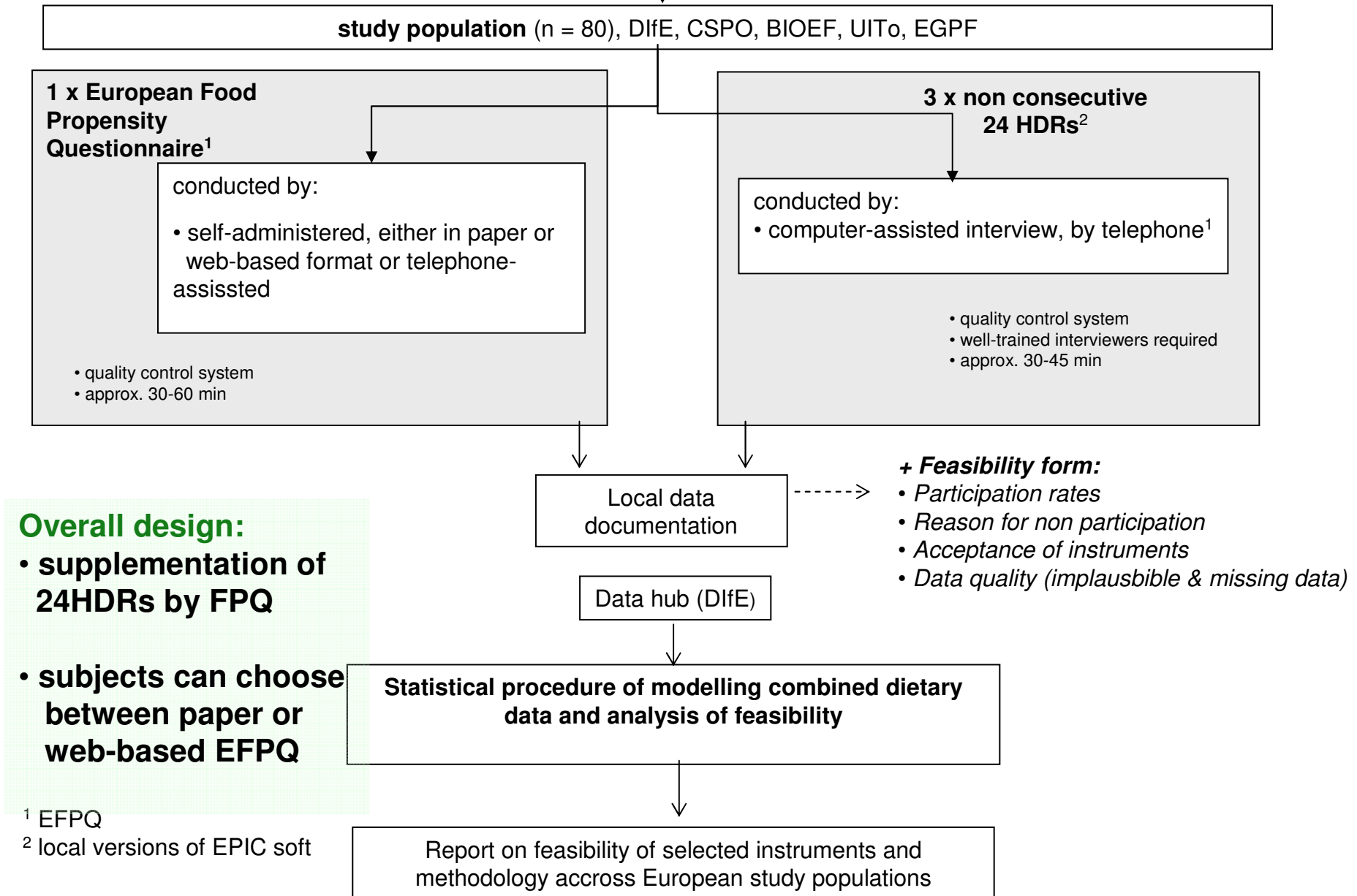
Prioritization (3)

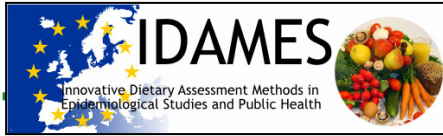


Development and application of a web-based multilingual European Food Propensity Questionnaire

- Rationale:
 - results of WP4
 - research have confirmed the feasibility and utility of the internet in larger studies but strategies for implementing it have yet to resolved
 - methodological reasons
 - adaptable for culturally different study populations
 - has the potential to improve the estimation, e.g. better identification of true non-consumers

Recruitment from local cohorts

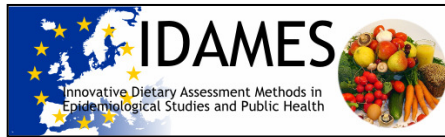




Summary of prioritizations



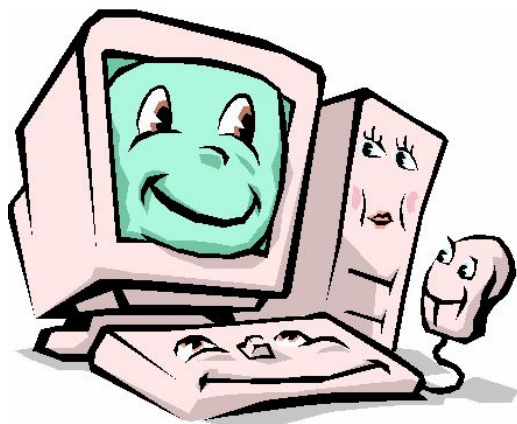
- estimation of usual dietary intake needs advanced statistical methods
- supplementation of short-term instruments by long-term instruments has the potential to optimize the estimation, but warrants further investigation
- internet-technologies are promising to facilitate many aspects of diet assessment, e.g. reduction costs, respondent burden, improvement of data quality



Outlook



- promoting a better understanding of the strengths and weaknesses of web-based instruments
- promoting a better understanding of the design and feasibility of approaches with several instruments
 - how many short-term instruments are needed?
- strategy to ensure good ranking for all study participants is required: which is the proper instrument?



All WP5partners:

Heiner Boeing

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Taie Kaasik

Nadia Slimani

WP6 Workshop, Tromsø 08.05.2009

**Thank you
for your attention!**

European Food Propensity
Questionnaire/EFPQ :

<https://nugo.dife.de/efbo/portal/de>