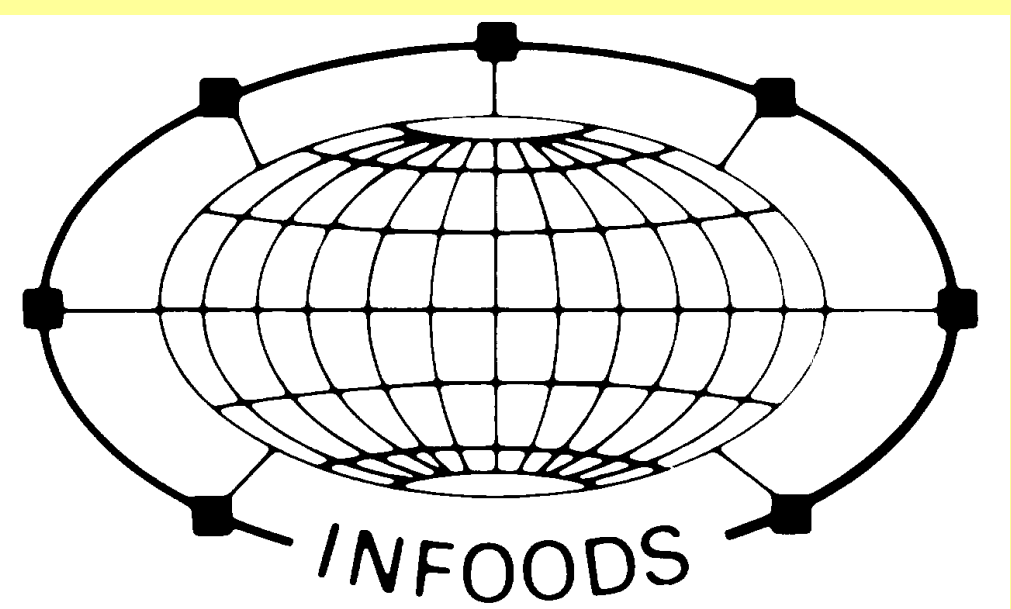# CAPACITY DEVELOPMENT IN FOOD COMPOSITION THROUGH DISTANCE LEARNING

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Needs
•Good quality food composition data are needed (e.g. nutrient intakes, labeling) and users must know how to use them correctly
•Since 1992, only 550 professionals have been trained in food composition training courses and many more professionals need knowledge on food composition
→ **Food Composition Study Guide developed to be used as:**
• **distance learning**
• **in university curricula**

17 modules based on
→Effective learning principles
→Sound instructional design and principles
→Greenfield & Southgate, 2003
→many other documents (INFOODS, EuroFIR, Codex, FAO/WHO etc)
Then peer reviewed by 2-4 reviewers per module.

Structure of each module
(1) Learning objectives
(2) Required reading, exercise material, resources, relevance, estimated time
(3) Questions
(4) Exercises
(5) Answers to questions
(6) Sample answers to the exercises
(7) General feedback using self rating

Additionally, 'Compilation tool'
was developed as simple database management system to allow learners to exercise and understand:
•Component identification
•Recipe calculation
•Documentation
•Compilation
(http://www.fao.org/infoods/software_en.stm)

Objectives of Study Guide
•To reach a wider audience cost-effectively which otherwise would have access to this knowledge
•To assist learners to fill their specific knowledge gaps and assess their knowledge acquisition
•To assist them to perform better when generating, managing or using food composition data
•To assist teachers to prepare lessons and tests for students

Food composition study guide
QUESTIONS AND EXERCISES

Target populations of Study guide
1. On the job-training
•Mainly compilers and professional users and also analysts
•Self-learners, i.e. unable to attend a food composition course (stand alone package)
•Students and teachers of Food composition courses (before, during or after)
2. In education for future professionals
•Students and teachers in universities in nutrition and related fields as distance learning tool and for teachers to prepare courses

Successfully used:
•**4 Food composition courses** (Bratislava and Iran in 2008, Benin and Ghana in 2009)
•**University** of Vienna in course in 2008
•**Self-learners** (in developed and developing countries, FAO)

→**Improved understanding, wording and completeness of modules**
→**Participants learned a lot through questions and application of knowledge with exercises; gained confidence for application**

Planned application:
Use as Distance learning package in universities (e.g. Vienna, Russia, Africa)

Dissemination
in English, French and Spanish:
•on INFOODS website (free of charge)
http://www.fao.org/infoods/publications_en.stm
•printed form as work books (small fee)
   -questions and exercises in one book,
   -answers with scoring and self rating
•CD
•INFOODS listserv
http://www.fao.org/INFOODS/network_en.stm
•Universities
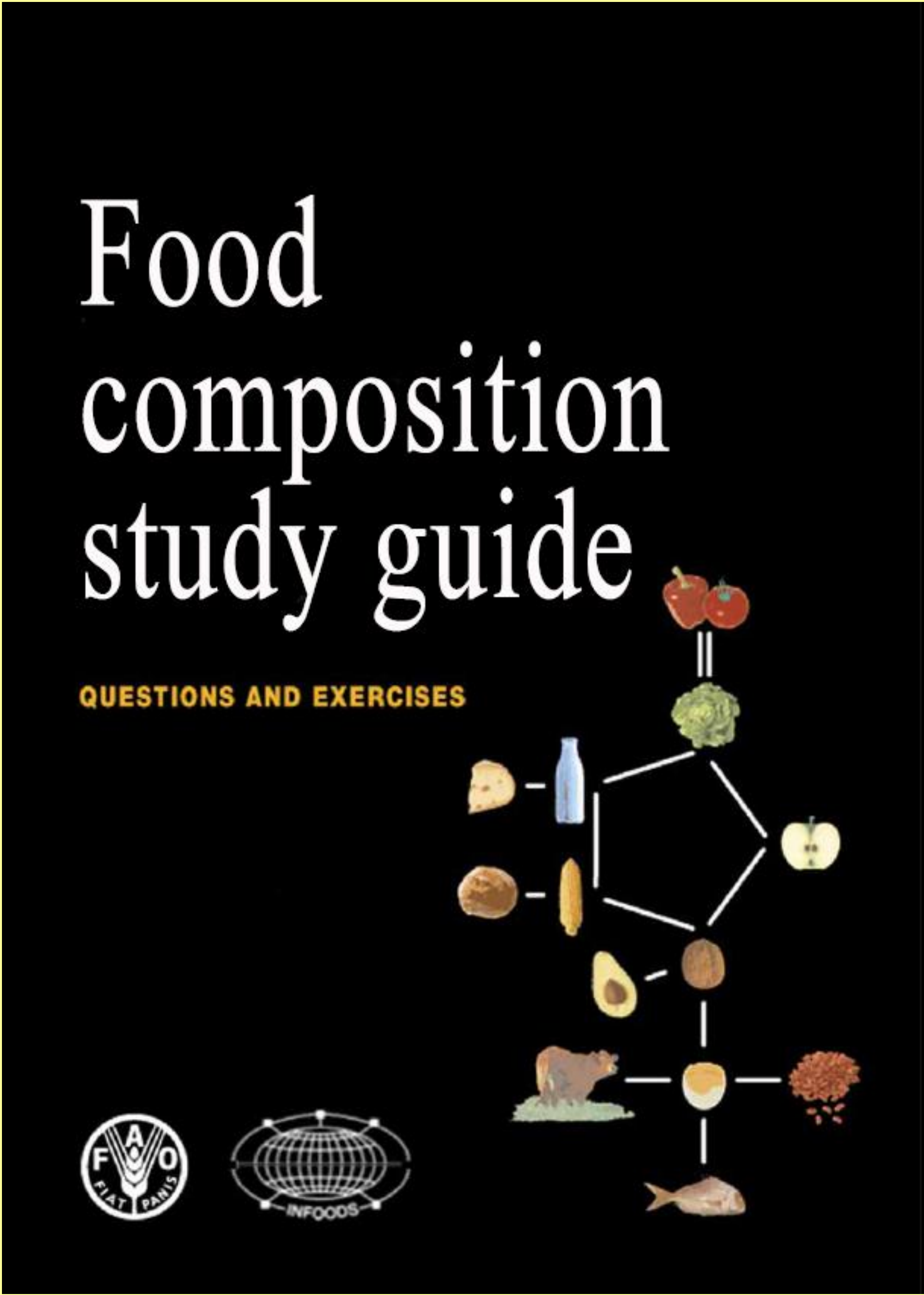
Example of a question
IVc.Q6 Is it advisable to copy energy values from one food composition data source to another? Select the correct response. (1 point)
Answer:

	Copy energy values
	Yes, because all food composition databases use the same energy conversion factors.
	No, because all food composition databases use the same energy conversion factors and may have different macronutrient values.
x	No, because food composition databases may use different energy conversion factors and may have different macronutrient values.

For your information:
The energy values to be published should always be calculated within the own food composition database. They should never be copied from other sources (except for comparison) because the different energy calculation systems used in the different sources can have a significant impact on the energy value. This is the golden rule about generating energy values in a food composition database.

Example of an exercise
III.E1 Match the foods from the sample survey below with the foods found in the food composition table, also given below. In some cases, several foods from the food composition table can be matched to a single food in the survey, e.g. tea with milk and sugar = 1 + 2 + 3. (10 points: 1 point for each correct response)

Foods from the food consumption survey:
- a. Tea with milk and sugar
- b. Pork chop, grilled, the visible fat not consumed
- c. Chicken breast, roasted, skin not consumed
- d. Tomato, grilled
- e. Aubergine (eggplant), fried in olive oil
- f. Rice, red, fried
- g. Rice, white, boiled
- h. Mutton in sauce
- i. Mixed vegetables, boiled
- j. Mango, dark orange flesh, very ripe
- l. Mars bar

Foods found in the national food composition table:
- 1. Tea
- 2. Sugar
- 3. Low-fat milk
- 4. Standard milk
- 5. Fortified semi-skimmed milk
- 6. Milk powder, full fat
- 7. Pork, lean
- 8. Pork, medium
- 9. Pork, fat
- 10. Chicken
- 11. Chicken, dark meat
- 12. Chicken, light meat
- 13. Chicken, grilled
- 14. Chicken, grilled, bones in
- 15. Mutton, fat
- 16. Tomato
- 17. Tomato
- 18. Aubergine (eggplant)
- 19. Vegetable oil
- 20. Rice
- 21. Rice, boiled
- 22. Spinach
- 23. Carrot
- 24. Mango
- 25. Tap water
- 26. Chocolate bar

Nr.	17 modules	Relevant for compilers/ users	Relevant for analysts
1	Basic principles of a food composition programme	•••••	••
2	Use of food composition data	•••••	••
3	Selection and nomenclature of foods in food composition databases	•••••	••
4	Components in food composition databases		
4.a	Component selection	•••••	•
4.b	Component nomenclature	•••••	•••••
4.c	Component conventions and units	•••••	•••••
4.d	Methods of analysing components	••	•••••
5	Sampling	•••••	•••••
6	Quality aspects of analytical data	••	•••••
7	Resources concerning food composition and publishing food composition information	•••••	••
8	Calculations of missing data and recipes	•••••	•
9	Database management systems, metadata and data interchange	•••••	•
10	Compilation and documentation	•••••	•
10.a	Additional exercises on comparing and compiling data from other food composition databases	•••••	
10.b	Additional exercises on translating food intake to nutrient intake	•••••	
11	Quality considerations in data compilation	•••••	••
12	Biodiversity	••••	

CONCLUSION: It is expected that the Study Guide will reach a wide range of professionals through formal training (e.g. **universities** in nutrition, dietetics and food science), as distance learning tool for **self learners** and in conjunction with **food composition courses**. This will improve the knowledge of future professionals and those already working in the generation and compilation of compositional data and in using them correctly.