TASK FORCE ACTIVIY REPORT

(August 2013)

on the

IUNS TASK FORCE CAPACITY DEVELOPMENT

Chair: Ibrahim Elmadfa

The Task Force Capacity Development was created and confirmed at the IUNS council meeting, April 2010.

In this TF following areas of nutrition and food research and fields of expertise were considered and coordinated.

1) **Recent developments in nutritional assessment and health monitoring**.
   A group of scientists agreed to share knowledge and expertise on various aspects of nutrition and health monitoring. The consulted colleagues were invited to participate in a session at the IUNS 20 ICN 2013, which was accepted as a parallel symposium under the
   Title "Methods and outcomes of nutritional assessment and health monitoring" and chaired by Ibrahim Elmadfa (Vienna, Austria) and Cristina Campoy (Granada, Spain).
   The presented topics were:

   + Using biomarkers for the validation of Nutrient Reference Intake Values and to verify intake data in Nutrition surveys:
   Ibrahim ELMADFA, University of Vienna, Austria
   + Iodine status assessment in countries of the EU: Pauline Emmett, University of Bristol, United Kingdom
   + Revision of the Chinese Iodine DRIs and some issues of upper safe intake:
   Wanqi ZHANG, University of Tianjin, China
   + Antioxidant status and the levels of Fatty acids-binding protein:
   Eunju PARK, Kyungnam University, Republic of Korea
   + Evaluation of water soluble vitamin-status in Austrian pregnant women, University of Vienna, Austria
   + Indicators of healthy aging and age related frailty:
   Heiner BOEING, DIFE, Potsdam, Germany

2) Another activity within this Task Force focused on **methodological aspects in food and nutrition research and development.** Consultations in this field with Angel Gil,

Granada, Venkatesh Iyengar, Washington, Anura Kurpad, Bangalore lead to the submission of a proposal for a session within the IUNS 20th ICN 2013, which was accepted as a parallel symposium under the
Title "IUNS Task Force Capacity development in innovative techniques in food and nutrition research" and chaired by I. Elmadfa and A. Gil. The presented topics were:

+ Diet quality, determinants and methods of assessment:
Ibrahim ELMADFA, University of Vienna, Austria
+ Gut micro-biota, tools for analyzing immune functions:
Angel GIL, University of Granada, Spain

+ Metrology based measurements in food and nutrition sciences:
Venkatesh Iyengar, Washington, USA
+ Isotopic methods for better precision of measurements in human nutrition:
Anura V. KURPAD, St John's Medical College, Bangalore, India

3) I motivated scientists from Lebanon, Morocco, Saudi Arabia and Palestine to join efforts with the University of Vienna and share knowledge and expertise on the important area of **Non-Communicable Diseases (NCDs) problematic in countries of the Middle-East and North-Africa (MENA)**. They agreed to submit a parallel symposium under the title "Nutrition, physical activity and the prevalence of NCDs in the Middle-East and North-Africa", chaired by Ibrahim Elmadfa and Nahla Houalla. The presentations in this session were:

+ Nutrition as a risk factor of cardiovascular diseases in coutries of the Middle-East:
Nahla HOUALLA, American University of Beirut, Lebanon
+ Nutrition and obesity in North-Africa:
IAEA, Vienna,Austria
+ Arab Teen Lifestyle (ATLAS) in countries of the Middle-East and North-Africa:
Hazzaa Al-Hazzaa, Pediatric Exercise Physiology Research Laboratory, Riyadh, Saudi Arabia
+ Building research capacity innutrition to prevent NCDs in the Middle-East and North-Africa:
Ibrahim ELMADFA, University of Vienna, Austria
+ The Palestinian Micronutrient Survey (PMS)- first representative national nutrition study (incooperation with UNICEF):
Ibrahim ELMADFA; Alaa Abu- Rub; Adly SKAIK; Najwa RIZKALLAH, Kamel BEN-ABDALLAH, University of Vienna, Austria; MOH Ramallah and Gaza; UNICEF Jerusalem.

4) Institutional Capacity Development in Food and Nutrition Sciences:

A compilation on sites and study programs in Food and Nutrition Sciences in countries of the IUNS Regions Europe (members of FENS), Africa (FANUS), Asia (FANS), North-America (NASN), Latin America (SLAN) was carried out based by Prof. Ibrahim Elmadfa, Dr. Sigrid Gloesl, Dr. Verena Novak, Dr. Aisha Siddiqui and Dr. Alexa Meyer using the information available online. The final evaluation and report writing could not be completed to be presented at the IUNS 20th ICN 2013. As a model for the whole compilation a short report on the situation in Europe (IUNS Region Europe and the WHO Region Europe) will be included in this Task Force Activity Report.

Preliminary report on the institutional capacity development in Food and Nutrition Sciences at universities in the IUNS-Adhering Bodies.

Introduction

Nutritional Science as an applied natural science was introduced first in the last century. Nutrition or food sciences are multidisciplinary and offered independently as applied biological or natural sciences. Studies in Human Nutrition include also different aspects of behavioral sciences.

Objectives

To show the different possibilities to study Nutrition and/or Food sciences at universities in the IUNS-Adhering Bodies. This preliminary report describes the situation in Europe.

Methods

Websites of universities in all countries were consulted for total number of universities and those offering study programs (1st cycle, 3-4 y. undergraduate; 2nd cycle, 2 or 1 y. postgraduate) in Nutrition or Food Sciences.

Classification: (based on the offered study programs) Nutrition Sciences comprised Human and Molecular Nutrition, Oecotrophology, Nutrition & Dietetics, Clinical Nutrition and Public Health Nutrition. Different codes for Food Chemistry, Bio- & Food Technology, Food Safety & Quality, Sensory quality, Bromatology / Catering, Regulatory affairs, One Subject Food Science and Technology were grouped under Food Sciences (see Table 1).

	Code	Subject
NUTRITION SCIENCES	1.0	Nutritional Sciences, Human Nutrition, Molecular Nutrition, Nutrition and Metabolism
	2.1.	Home Economics and Nutrition; Oecotrophology
	2.2.	Nutrition and Food Science, Food Science and Nutrition
	2.3.	Nutrition and Rural Development
	3.1.	Applied Nutritional Sciences
	3.2.	Nutrition and Dietetics
	3.3.	Public Health Nutrition, Nutrition and Health
	4.1.	Clinical Nutrition, Nutritional Medicine
	4.2.	Dietetics, Clinical Dietetics
FOOD SCIENCES	5.1.	Food Science
	5.2.	Food Science and Technology, Food Engineering, Food Technology
	5.3.	Food Chemistry
	5.4.	Food Quality and Safety Systems, Food Hygiene, Microbiology
	5.5.	Bromatology, Food Management, Food Economy, Catering, Regulatory Affairs
	5.6.	Bio and Food Technology
	5.7.	Sensory Quality
	6.0	One Subject - Food Science and Technology (e.g. Protein, Meat, Wine)

Table 1: Subject Classification

Statistics:
(for each country as well as cumulative)

- General information
  - Number of Universities
  - Universities with study programs "Nutrition or Food Sciences"
  - Number of study programs "Nutrition or Food Sciences"
    - First Cycle (undergraduate)
    - Second Cycle (postgraduate)
    - Ratio undergraduate/postgraduate study programs Nutrition or Food Sciences

- Accessibility of Nutrition & Food Science studies at Universities
  - Universities per 1 mio Inhabitants
  - Universities with study programs "Nutrition or Food" per 1 mio Inhabitants
  - Number of study programs "Nutrition or Food" per 1 mio Inhabitants
    - First Cycle (undergraduate)
    - Second Cycle (postgraduate)
  - Countries per gross national income per capita (PPP int. $)

- Subject Classification
  - Number of study programs "Nutrition Sciences"
    - First Cycle (undergraduate)
    - Second Cycle (postgraduate)

- Number of study programs "Food Sciences"
  - First Cycle (undergraduate)
  - Second Cycle (postgraduate)

- Graduation in "Nutrition and Food Sciences"
  - First Cycle
  - Second / Third Cycle
  - Examples for different undergraduate degrees
  - Examples for different postgraduate degrees
  - Examples for "One Subject – Food Science and Technologies"

Countries

For the whole project data from 127 countries were already collected. Almost all of the IUNS Adhering Bodies are comprehended.
In the following, the results for the WHO European Region are presented.

The academic landscape in Europe

According to Eurostat, in 2011, there were 2,651 universities in the 41 countries of the WHO European Region with more than 1 mio. inhabitants corresponding to 3.15 universities per 1 mio. inhabitants.

Table 1.: Countries in the WHO European Region (Number of countries: 53)

	FENS member	**Data collection completed**
Albania		x
Andorra		x
Armenia		x
Austria	x	x
Azerbaijan		x
Belarus		x
Belgium	x	x
Bosnia and Herzegovina		x
Bulgaria	x	x
Croatia	x	x
Cyprus		x
Czech Republic	x	x

Denmark	x	x
Estonia	x	x
Finland	x	x
France	x	x
Georgia	x	x
Germany	x	x
Greece	x	x
Hungary	x	x
Iceland	x	x
Ireland	x	x
Israel	x	x
Italy	x	x
Kazakhstan		x
Kyrgyzstan		x
Latvia		x
Lithuania		x
Luxembourg		x
Malta		x
Monaco		x
Montenegro		x
Netherlands	x	x
Norway	x	x
Poland	x	x
Portugal	x	x
Republic of Moldova		x
Romania	x	x
Russian Federation		x

San Marino		x
Serbia	x	x
Slovakia		x
Slovenia		x
Spain	x	x
Sweden	x	x
Switzerland	x	x
Tajikistan		missing
The former Yugoslav Republic of Macedonia		x
Turkey		x
Turkmenistan		missing
Ukraine		x
United Kingdom	x	x
Uzbekistan		missing

The Bologna Process:

The Bologna Process aimed to create a Higher Education Area in which students can choose from a wide and transparent range of high quality courses and benefit from smooth recognition procedures. The Bologna Declaration of June 1999 has put in motion a series of reforms needed to make European Higher Education more compatible and comparable, more competitive and more attractive for and students and scholars from other continents. Central objectives are the introduction the three cycle system: (Bachelor / Master / Doctorate), quality assurance, and recognition of qualifications and periods of study.

Nutritional and Food Sciences in Europe (as of 2011)

Of the 2,651 universities in 41 European countries with more than 1 mio. inhabitants, 347 (13% or 0.41 per 1 mio. inhabitants) offered study programs in Nutrition or Food Sciences with a total of 1,089 study programs (1.29 per 1 mio. inhabitants). Of these, 43% are dedicated to the field of Nutritional Sciences and 57% to Food Sciences. However, there are large regional differences with a dominance of nutritional sciences in the northern parts (ratio of 67 to 33% of nutritional to food sciences), of food sciences in Eastern Europe (13% vs. 87%) and a more equilibrated distribution in Western and Southern Europe (51:49% and 45:55%, respectively) (see table 2).

Table 2: Classification of Study Programs in Nutrition and Food Sciences in Europe*

Northern Europe	
Nutritional Sciences 67% (276)	
undergraduate 37%	postgraduate 63%
Food Sciences 33% (137)	
undergraduate 35%	postgraduate 65%

Eastern Europe	
Nutritional Sciences 13% (29)	
undergraduate 66%	postgraduate 34%
Food Sciences 87% (196)	
undergraduate 68%	postgraduate 32%

Western Europe	
Nutritional Sciences 51% (80)	
undergraduate 58%	postgraduate 42%
Food Sciences 49% (78)	
undergraduate 47%	postgraduate 53%

Southern Europe	
Nutritional Sciences 45% (72)	
undergraduate 58%	postgraduate 42%
Food Sciences 55% (87)	
undergraduate 47%	postgraduate 53%

* countries with >1 mio inhabitants classified into regions according to UN Statistics 2011

Source: University Directory world wide: http://www.university-directory.eu

A variation was also seen in the distribution of undergraduate and postgraduate programs. While in Western, Southern Europe and particularly Eastern Europe showed a predominance of undergraduate programs in both disciplines (53 to 68% of undergraduate vs. 32-47% of post-graduate programs), the opposite was seen in Northern Europe (64% of postgraduate programs). In total, 565 study programs are undergraduate (52%) and 524 are postgraduate (48%) (see table 2).

Despite the efforts towards harmonization, there is still a variety of academic degrees obtained upon completion of different study programs in nutritional and food sciences. While, most 1st Cycle programs lead to a Bachelor of Science / (Hons.) degree (B.Sc./B.Sc. (Hons.), this can be further specified depending on program focus (e.g. Bachelor of Engineering (B.Eng.), Bachelor of Education (Honours) B.Ed. (Hons), Bachelor of Agriculture (B. Agric.)). The same applies to the Master of Science / (Honours) degree obtained in 2nd Cycle programs (Master of Public Health, M.PH.), Master of Science in Public Health (M.Sc.PH.), Master of Nutrition (M.Nutr.), Master of Advanced Studies (MAS). Some countries have maintained other degrees such as the Netherlands and France whose respective Ingenieur degree and Licence Professionally are considered equivalent to the British BSc. (Hons.). In Slovakia the Master of Science degree program finishes with the Academic title “Engineer” (Ing.). The United Kingdom has also preserved a variety of degrees (e.g. Postgraduate Diploma, PGDIP, Postgraduate Certificate, PGCert, Higher National Diploma, HND, Foundation Degree of Science, FdSc, etc.)

In the European Higher Education the majority of study programs in Nutrition or Food sciences follow the Bologna process. This led to more program compatibility/comparability, promoted mobility of students but also to extremely high specialized postgraduate programs. Moreover, there is also still a great variety of obtained degrees.