

External Review Committee Report

2000-2006

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Chapter 1. Research evaluation research Institute Nutrim

1.1 Research review Nutrim 2000-2006

This report presents the result of the evaluation of the research of the Nutrition and Toxicology Research Institute Maastricht (Nutrim) by an international review committee. The evaluation was carried out in accordance with the Standard Evaluation Protocol for public research organisations (SEP), as published by the Association of Universities in the Netherlands (VSNU), the Netherlands Organisation for Scientific Research (NWO) and the Royal Academy of Arts and Science (KNAW). Following the guidelines of the Standard Evaluation Protocol a self evaluation report was produced by the research institute NUTRIM. The institute also provided proposals for international experts to take part in the Review Committee. The University Board of Maastricht University agreed upon both the self evaluation report and the proposed Review Committee, including the proposed chair and secretary to the committee. The review is based upon the self evaluation report for the years 2000-2006. The committee visited the research institute NUTRIM on April 10th and 11th 2007.

1.2 The Review Committee for Nutrim

The composition of the Review Committee for Nutrim, as proposed by the research institute and installed by the board of Maastricht University, is as follows:

- Prof. dr. H.P. Sauerwein (Chairman), Chair in Energy Metabolism, Academic Medical Centre, University of Amsterdam
- Dr J. O'Brien, Chief Executive Food Safety Authority of Ireland, Dublin
- Prof. P. Vineis, Chair in Environmental Epidemiology, Imperial College London
- Prof C. Grunfeld, Professor of Medicine, University of California, San Francisco and Chief, Metabolism and Endocrine Sections, Veterans Affairs Medical Center of San Francisco.
- Drs. S.W.G. Huntjens (secretary), Strategic Planning and International Relations, Maastricht University.

1.3 Information for the committee and site visit

The assessment is performed on the basis of the self evaluation report provided by the research institute NUTRIM for the period 2000-2006. The self evaluation reports were sent to all committee members prior to the site visit. The committee held meetings with the responsible board for research management and policy within Maastricht University and with the particular institute management. The committee undertook a site visit to individual research groups, where meetings and conversations were held with the division leaders, and gatherings with other participants in the research programmes, especially PhD students (AIOs). The committee assessment covered the research carried out in the period 2000-2006, according to the elements in the self evaluation report, as mentioned in Appendix 4 of the Standard Evaluation Protocol. The assessment scores on quality, productivity, relevance and viability (or 'prospects') was done in accordance with the five-point scale of the SEP.

Chapter 2. Review of the entire Institute

2.1 Reflections on the leadership, strategy and policy of the Institute.

NUTRIM is in general a well organized Institute with a very good performance. All the following remarks are meant for further improvements in the near future, necessary in a scientific world continuously aiming for higher goals (Mediator 2007; 5:4-6).

The mission statement by NUTRIM says: "Nutrim initiates and catalyzes translational research at the cross-road of different disciplines into nutrition and metabolic health risks and benefits focusing on societal important chronic diseases. This research..."

This statement is quite broad and is applicable to each research Institute with nutrition as a focus. It ignores the unique position NUTRIM could obtain in nutrition-related research in the Netherlands. There are quite a few such research institutes in the Netherlands. The difference between NUTRIM and these institutes is that all the others are related to the health sciences, while NUTRIM is the only one really involved in the medical field, due to the merger in Maastricht of the Medical Faculty and the Faculty of Health Sciences. In the present program, the emphasis is still on general health topics and less so on patient-related topics. The research programs proposed by Wageningen University and NUTRIM seem to have more of an overlap than is desirable for NUTRIM to have proper visibility. Being part of VLAG, in which Wageningen University has the leading role, does not add to the visibility of NUTRIM. With the limited budget that NUTRIM has, the research should be more into depth on specific topics, approached from the medical viewpoint and less so into the rather diverse spectrum of nutrition-oriented research that involves NUTRIM's present program. The NUTRIM self evaluation program states that the research is disease-oriented, but the ERC does not agree with this statement at least not in the sense a medical faculty could/should do.

Another part of the research aim and strategy relates to teaching: "through its PhD program NUTRIM aims to produce investigators of high scientific excellence.". This is a laudable aim. However, in addition to NUTRIM's regular PhD program, in 2008 a 2 year research masters program will start. Nowhere in the report are the consequences of this extension of the teaching program discussed. The ERC is concerned that this will increase the burden on the staff and potentially diminish research output, as master's programs last usually 2 years. In PhD programmes, research output in the first 2 years is usually less than in the last 2.

NUTRIM is headed by a scientific director, who is appointed by the Dean of the Faculty. The scientific director has the final responsibility for the management of NUTRIM, including organization and management of the research program, the training of the graduate students and post-doctoral fellows, the financial management, the scientific output and the public relations of the Institute. NUTRIM has a coordinating office that manages financial and organizational issues. The next administrative layer comprises the Management team (MT) NUTRIM (members: scientific director, managing director and the 2 division leaders). Advice/consultation can be given by the NUTRIM Council (members MT, research team leaders, PhD-coordinator). The last layer in this pyramid structure is the 2 divisions.

The scientific personnel within NUTRIM is appointed at the department level, of which 14 are participating in NUTRIM. The Scientific Director of NUTRIM and the Department Head meet twice yearly to discuss the qualitative and quantitative contribution of the Department to the School. According to the new FHML regulations the Scientific Director may decide, based on these evaluations, to change the formative contribution of the Department participating in the school. It is unclear for the ERC if the Faculty actually allows the Scientific Director to induce important changes to increase focus and mass of the Institute or whether this power in reality proves to be restricted.

The quality of scientific personnel is of utmost importance for the research output, quantitatively but especially qualitatively. The possibility exists that Departments have other priorities than NUTRIM. A potential schism between priorities of NUTRIM and the Departments will be detrimental to NUTRIM output.

Also in this structure, on the one hand, the contribution of individual researchers is not very visible; on the other hand it gives them the opportunity to choose their own direction without paying too much attention to NUTRIM as a whole. It is not clear to the ERC, if the Scientific Director has real power to influence this.

2.2 Assessment of the quality of the resources, funding policies and facilities

University-based research institutes are generally funded by the University itself, governmental organizations, national science foundations and industry. NUTRIM is funded for ~50% by contract research. Contract research is defined as research funded by third parties (industry and EU projects). The relative contribution of each of these 2 parties is not given. However, it is the impression of the ERC that the majority of the funds in this category for financial reasons are provided by industry. Industry sponsored research has potentially 2 problems: the research program is dictated by industry and not necessarily really fitting in NUTRIM's research program. In addition, industry sponsored research is in general more practically directed and less directed to basic research questions that should be the base of a research institute's research program. This worries the ERC, especially as research funds aiming at more basic questions contribute < 20% to total funding of NUTRIM. It is the impression of the ERC that (due to too limited (?) funding by other parties) more than a minor part of the research is dictated by "where the money is (=industry) rather than by major scientific questions. Even in the event that our impression is not fully correct and a reasonable amount of money is provided by EU, the ERC is still concerned. THE EU sponsored programmes for nutrition are more oriented to the health science field. The negative aspect of this for NUTRIM is already discussed.

The facilities comprise stable isotope facilities, a proteomics centre, a genomics centre, facilities to measure energy metabolism and body composition and clinical research facilities. The ERC considers these facilities adequate and up-to date, but notes that usage of these facilities is less than optimal, in the sense of time, but most important in their use by the different groups, as some of the facilities are just used by single groups. The animal facilities were not visited, due to time constraints, but a consistent comment by the many researchers of NUTRIM on this issue related to suboptimal facilities and organization of these facilities.

2.3 Assessment of the academic reputation of the Institute

The academic reputation of a research institute is not necessarily the same as the reputation of individual PI's. The academic reputation of an Institute is defined by the general feeling that publications from that Institute are mainly high-level and those researchers working in that institute automatically do better research due to its stimulating environment. PI's can be excellent due to their characteristics, irrespective of facilities and possibilities of the institute in which they work. There are many examples that aiming for an institute of high academic reputation is very valuable.

The ERC has the impression that the reputation of NUTRIM is based on the reputation of a limited number of PI's and less so on the Institute itself. The ERC does not fully share the very positive picture on this issue given by NUTRIM in its self-evaluation report. The ERC agrees that NUTRIM has excellent PI's as indicated by having Veni, Vidi, Aspasia scholars and KNAW fellows (~15% of total staff). However the ability to attract funding by NWO and comparable agencies is not impressive (< 20% of an already limited budget) and probably mainly (?) obtained by these excellent PI's. Reorganization of the structure of NUTRIM around these excellent PI's will very likely improve the academic reputation of NUTRIM as institute.

2.4 Assessment of the societal relevance of the Institute

To have major societal impact NUTRIM focuses on highly prevalent chronic diseases that are among the top 5 causes of death in the western world and among the top 5 causes of disability adjusted life years. Another reason for this is the prioritization by the government(s) of the reduction of environmental and nutritional risks of these diseases. The ERC acknowledges this. However, this focus does not necessarily improve the impact of NUTRIM, as almost the whole "nutritional world" and a major part of the "medical world" is doing this. To enlarge societal relevance of NUTRIM, finding of a niche, in which NUTRIM is unique, is of vital importance in this highly competitive field. Such niche should use the strength of NUTRIM, as it is the only nutrition related Institute really involved in the medical field, due to the merger in Maastricht of the Medical Faculty and the Faculty of Health Sciences. Translational patient-involved research could be such a niche, paying attention to subtle differences in phenotypic disease expression.

2.5 Reflection on the strengths and weaknesses as formulated by the Institute

The ERC acknowledges some discrepancies in the text of the SWOT analysis of the Institute between the sections "strengths and weaknesses". In the section strengths key words are: good coherence, major funding, widely recognized as one of the best institutes, while in the weakness section it is stressed that NUTRIM-investigators were only successful in obtaining grants at the junior and mid career level and the Institute lacks visibility within the Academic Hospital.

In addition, major funding is by Industry and in EU programs. With the impression of the ERC that research is sometimes money driven, the possibility exists that industry makes major contributions to the funding.

Except for this understandable phrasing of sentences, the SWOT analysis seems to be a balanced analysis.

Chapter 3. Review of the research program of the Institute

3.1 Quantified assessment of the quality, productivity, relevance and prospects of the research programme

The ERC does not make any comment on the quality of individual research groups, but looked only at coherence of the program.

The research of NUTRIM is organized in 2 divisions. Within division 1 (Chronic Inflammatory Diseases and Cancer), three main areas are defined (inflammation and innate defence, nutritional toxicology, nutritional epidemiology and intervention). Research in division 2 is named Chronic Metabolic Disorders with two research themes named Cellular regulation and Plasticity and Energy and Intermediary Metabolism.

The ERC acknowledges fully that the Institute started as a collection of research groups, more or less grouped around a common theme, but not necessarily closely related. The ERC also recognizes the major efforts already done by the Institute to create a more homogeneous program. This step seems to be more successful in division 2 compared to division 1. However, this division structure does not seem logical as it still looks as if it is more based on internal balance of power rather than on science.

The research lines within the divisions fail to interact with each other (concluded from the structure in the self-evaluation document and interviews). The choice for certain research lines within a division does not seem always logical.

3.2 Explanation of the quantified assessment

3.2.1 Reflection on the leadership, strategy and policy of the research programme

In addition to the already mentioned strengths and weaknesses, additional remarks can be made. Bio-informatics and biostatistics seem to be underdeveloped.

The institute does not make clear cut choices between either population-based research or clinically based research. For population-based research the necessary infrastructure seems less developed than required for a leading role in this field.

The research in the nutrigenomics part of NUTRIM does not seem very hypothesis driven. Risk assessment is mentioned, but no data are provided that this part of NUTRIM can really compete with prestigious institutes elsewhere in the Netherlands.

3.2.2 Assessment of the quality of the research staff, (human) resources, funding policies and facilities

The SWOT analysis in the self evaluation seems adequate, especially concerning NUTRIM's weaknesses, but the report lacks a regard for possible consequences. It is absolutely clear that choices have to be made with rearrangement and sometimes closure of certain components.

The opportunities seem to be more "hope for improvement" frequently by the outside world and less about changes in present failing opportunities within the Institute itself.

3.2.3 Assessment of the quality and quantity of the publications and of the publication strategies

It was not the intention by the ERC to assess the quality of each individual research group. For more general remarks see abovementioned comments

3.2.4 Assessment of the academic reputation of the programme

See former comments (chapter 2.3)

3.2.5 Assessment of the relevance of the programme from an academic perspective and from a broader social perspective

See former comments (chapter 2.4)

3.2.6 Assessment of the future perspectives of the programme.

The future plans, as worded by division 2 seem to indicate that some integration already took place. This is less obvious for division 1. As NUTRIM lacks sufficient focus, these perspectives seem to be more the sum of the perspectives of the different groups than an integrated perspective. Some groups in the two divisions would profit from becoming part of the same division.

In order for the institute to strengthen and reach more focus, the impact of scientific research should be the leading principle for allocation of resources and not the amount of money provided by certain (external) funds, especially funding of research questions not adding to the academic reputation or visibility of NUTRIM. The Dean and Faculty Board should support and empower the Scientific Director of NUTRIM to enable such changes.

Chapter 4. Conclusions by the ERC

4.1 General remarks

- NUTRIM is in general a well organized Institute with a very good performance. All the following remarks are meant for further improvements in the near future, necessary in a scientific world continuously aiming for higher goals (Mediator 2007; 5:4-6).
- A clear and short mission statement should be formulated. There should be coherence between this mission statement and the names given to the research lines and objectives of the research lines, i.e. low-level objectives to cascade down from the NUTRIM mission and research line objectives. All individual researchers should be following the same overall roadmap. Groups that do not really fit in should leave the Institute.
- A more PI (principal investigator) centred structure with less emphasis on NUTRIM as such will better show individual contributions. This will not endanger NUTRIM as such, as today qualified research can not be done by individual PI's and collaboration is a hallmark of high quality research. In this concept, the task of NUTRIM is more supportive (to provide opportunities) for PI's and less responsible for the research program in strict sense. The ERC came to these considerations, as the research program of NUTRIM does not seem to be very focussed with (major) differences in the quality of the different research groups and sometimes lack of cooperation (see chapter 3), despite recent major efforts to change this, although the ERC acknowledges the importance of these major efforts. This is also exemplified by the Mission Statement: "NUTRIM initiates and catalyzes translational research at the cross-road of different disciplines into nutritional and metabolic health risks and benefits focussing on societal important chronic diseases. This statement is applicable to all Institutes that do research in this area. It could be better for the strategy and the policy of the Institute when choices are made and a statement is formulated based on the results/ directions of the more successful PI's. This can also be a boost for the others to improve collaboration.
- The academic reputation of a research institute is not necessarily the same as the reputation of individual PI's. The academic reputation of an Institute is defined by the general feeling that publications from that Institute are mainly high-level and researchers working in that Institute automatically do better research due to its stimulating environment. PI's can be excellent due to their own characteristics irrespective of facilities and possibilities of the institute in which they work. There are many examples that aiming for an institute of high academic reputation is very valuable, for this a more coherent research program with a more narrow focus is needed. To improve academic reputation the ERC suggests that the research program of the Institute should be more centred on the excellent PI's.

Conclusions in assessment ratings

Overall assessment of the institute	very good	4
Overall assessment of scientific quality	very good	4
Overall assessment of scientific productivity	very good	4
Overall assessment of scientific relevance	very good	4
Overall assessment of long-term viability	very good	4

This rating is made, based on the high potential already available in NUTRIM, and the rating given in the 1998 assessment by the Royal Netherlands Academy for Arts and Sciences (KNAW). The ERC acknowledges that improvements have been made since that time. The ratings are therefore the same or in some aspects higher.