2004 Annual Report

Food and Nutrition Research Institute
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Secretary’s Message

We at the Department of Science and Technology, congratulate the men and women of the Food and Nutrition Research Institute (FNRI) for their noteworthy contributions in the advancement of Science and Technology through accurate and innovative R&D and S&T projects in the field of food and nutrition.

As one of the vital agencies of DOST, in accordance with the National Science and Technology Plan (NSTP) 2002-2020, the FNRI has effectively conducted researches geared towards the improvement of the nutritional status of Filipinos. For instance, it has developed the iron premix rice (IPR) using the extrusion technology in order to make iron-fortified rice (IFR) less expensive. Also, it worked on the fortification of margarine with vitamins A, B1, iodine, omega-3 & 6 fatty acids and the development of fresh miki with squash aimed to offer healthy, nutritious and affordable alternative products to the masses.

The timely release of the results of the 6th National Nutrition Survey (NNS) has provided us with much needed updates on the nutritional and health status of the country. Iron Deficiency Anemia (IDA) is still a public health concern among Filipino children, pregnant and lactating women. The survey results showed high prevalence (66%) of iron deficiency anemia among infants, with ages of six months to less than one year, compared to the previous survey (5th NNS, 1998) with a prevalence of 56.6%. For the iodine status of children, results showed an improvement in iodine deficiency disorder (IDD) among six to twelve year-old children, from 36% with moderate to severe iodine deficiency disorder in 1998 to 11% with moderate to severe iodine deficiency disorder in 2003. This can be attributed to an increased percentage of households using iodized salt and other iodine-fortified food products.

However, despite the general improvement in the country’s nutrition situation, the emerging problem of obesity and being overweight among adults and children has started to become evident. With these recent results, more specific and effective approaches are needed to be established. Hence, more work needs to be done.

I, therefore, encourage and challenge you to never waver and falter in your and the Department’s belief that nutrition is a human right.

ESTRELLA F. ALABASTRO, Ph.D.
Secretary
Director’s Message

In behalf of the Food and Nutrition Research Institute (FNRI) family, I am proud to present the Institute’s R&D and S&T contributions to help alleviate the country’s formidable problem of malnutrition in support of the Department of Science and Technology’s (DOST’s) National Science and Technology Plan (NSTP) 2002-2020.

A total of 24 R&D and S&T projects were completed in 2004. Furthermore, this was the year when the initial results of the 6th National Nutrition Survey (NNS) were presented to its various stakeholders. The results showed a general improvement in the nutrition situation of the country between 1998 and 2003. These findings serve as basis for decision-making of the government and private sector.

In our continuing efforts to release accurate and up-to-date information, the Institute regularly provides and disseminates the results of these research findings to our various stakeholders. Our strong tri-media partnership has significantly contributed to FNRI’s position as one of the most active DOST agencies in terms of media exposure. I am proud to report that the Institute’s tri-media mileage generated in 2004 reached a value of Php 5.3 million.

I would like to thank our FNRI partners and collaborators for their all-out support to the Institute during my stint as the FNRI Director for more than 6 years. Our joint undertakings have been very fruitful and fulfilling because of the strong ties that have been nurtured and strengthened over the years.

I would also like to take this opportunity to congratulate and sincerely thank the FNRI family for its dedication and commitment in ensuring the successful implementation of its programs and projects. Thus, holding truth to this passage, “the success...of an organization does not solely lie on the shoulder of one person but on the hands that bind each member in reaching one common goal.”

In the end, all these initiatives will be highly relevant if we continue to focus our energies, abilities and talents in attaining optimum nutrition for all Filipinos.

CORAZON VC. BARBA, Ph.D.
Director
Director’s Message

It is with great pride that I present the 2004 R&D and S&T projects and programs that the Food and Nutrition Research Institute (FNRI) has contributed in advancing science and technology in food and nutrition. These all form part of the DOST’s National Science and Technology Plan (NSTP) 2002-2020.

In line with President Gloria Macapagal-Arroyo’s Ten-Point Agenda to “Beat the Odds”, the Institute conducted in 2004 programs and projects that assisted in generation of livelihood opportunities and employment for poverty alleviation. In response to the basic needs of the poor, the FNRI continued to implement R&D on micronutrient fortification of foods. The results of the nutrition surveys and studies were used to develop policies and programs that are both short-term and long-term solutions to health and nutrition problems. The Institute also strengthened and improved its information and communication technology capabilities to effectively and efficiently promote food and nutrition data.

Three (3) of the Institute’s technologies, namely, iodine-rich drinking water, vitamin A-fortified sugar premix and iron-fortified rice premix were transferred to three (3) small and medium scale enterprises (SMEs). Commercialization of these technologies is now underway.

The FNRI also continued to provide world-class laboratory services. The Food Analytical Service Laboratory (FASL) was granted the renewal of its Certificate of Accreditation to the Electrotechnical Commission (ISO/IEC) 17025 in the field of Chemical and Microbiological Testing. The Certificate of Accreditation was given by the Bureau of Product Standards Laboratory Accreditation Scheme-Department of Trade and Industry (BPSLAS-DTI).

In recognizing the accomplishments of the Institute for the past year, we would like to thank Dr. Corazon VC. Barba for her stewardship for more than six years as FNRI Director. We would also like to thank Dr. Rogelio A. Panlasigui, DOST Undersecretary, and Dr. Gemiliano DL. Aligui, Philippine Council for Health Research and Development (PCHRD) Executive Director, in leading FNRI as its Officers-in-Charge (OICs) from July 12 to September 5, 2004, and September 6 to December 22, 2004, respectively.

As we end the year and move on to another year of dedicated service to the Filipino people, we once again pledge our commitment to fight malnutrition with accurate data, correct information and innovative technologies.

MARIO V. CAPANZANA, Ph.D.
Officer-in-Charge
Office of the Director
Executive Order No. 94, dated July 1, 1947 created the Food and Nutrition Research Institute (FNRI) as the first clearinghouse of data and information on food and nutrition. Over the years, it has evolved as the lead government agency for food and nutrition research in the country. From its humble beginnings of only eight (8) pioneers, the FNRI now has in its fold 198 trained and committed personnel.

**Mandate**

*Executive Order No. 128, dated January 30, 1987, mandates the FNRI to:*

1. undertake research that defines the citizenry’s nutritional status with reference particularly to the malnutrition problem, its causes and effects and identify alternative solutions to them;
2. develop and recommend policy options, strategies, programs, and projects which address the malnutrition problem for implementation by the appropriate agencies and;
3. disseminate research findings and recommendations to the relevant end-users.

In 1996, Executive Order No. 352 designated the FNRI’s National Nutrition Surveys and Regional Updating of the Nutritional Status of Filipino Children among the statistical activities that generate critical data for decision-making of the government and private sector.

In carrying out these mandates, the Institute is guided by its vision of optimum nutrition for all Filipinos, socially and economically empowered through scientifically sound, environment-friendly and globally competitive technologies.

The FNRI affirms that nutrition is a human right.
Highlights of Accomplishments

The Food and Nutrition Research Institute completed 24 R&D and S&T projects in 2004. These projects are in line with President Gloria Macapagal-Arroyo’s Ten-Point Agenda to “BEAT THE ODDS”. Furthermore, the Institute being under the Department of Science and Technology (DOST), aligned these projects in accordance with the Department’s National Science and Technology Plan (NSTP) for 2002-2020. The NSTP 2020 is a long-term indicative plan that defines, in broad strokes, the direction of S&T development in the Philippines for the next 15 years.

**BEAT THE ODDS through generation of livelihood opportunities and employment for poverty alleviation...** The FNRI conducted technology diffusion activities through technology transfer initiatives, targeted for the socio-economically disadvantaged sectors of the country. This led to the commercialization of three (3) technologies: iodine-rich drinking water, vitamin A-fortified sugar premix and iron-fortified rice premix. Fortification of these staples provides the much needed access to nutritious food among the country’s impoverished sector.

The FNRI also diffused 27 food and nutrition technologies to 1,033 clients. Requests for food analyses, technology business incubator projects, and technology transfer activities served 232 clients and generated an income of P798,360.00 for FNRI. In addition, an income of P33,619.05 was earned from sales of FNRI books and pamphlets. A total of 1,169 individuals were served through the conduct of 30 technical trainings on health/nutrition and livelihood programs.

In September 2004, the FNRI was granted the License-to-Operate as Nutritional Food Processing Center by the Bureau of Food and Drug (BFAD). The Institute’s Food Analytical Testing Laboratory was also accredited by BFAD and was able to sustain its accreditation as Food Analytical Service Laboratory (FASL) certified under ISO/IEC 17025.

The FNRI’s efforts towards helping the country improve productivity and global competitiveness continued to be strengthened in 2004. Realizing the challenges of competitiveness of Philippine products in worldwide markets, the Institute completed the project on Quality Management Systems for the DOST Regional Analytical Laboratories in conformance with ISO/IEC 17025.
**BEAT THE ODDS by responding to basic needs of the poor...** One of the Institute’s key functions is to help improve the health and nutrition status of the poor. The FNRI continued to implement R&D on micronutrient fortification of foods. The Institute in collaboration with San Pablo Manufacturing Corporation (SPMC) also developed the technology for margarine fortification with vitamins A and B₁, iron, iodine, omega-3 and omega-6 fatty acids. A study on the effects of iodized salt on processed food products commonly produced by Filipino food processors was also conducted.

In support of the *Technology Incubation for Commercialization (TECHNICOM) Program* of the DOST, the FNRI in collaboration with Superlative Snacks, Inc., a private company, conducted a scaled-up production of iron premix rice (IPR) using the extrusion technology. With the successful transfer of the technology, the start-up production of IPR is now underway.

**Creating a More Conducive S&T Policy Environment...** To define the country’s nutritional status, the FNRI presented the initial results of the 6th National Nutrition Survey (NNS) conducted in 2003.

A major finding of the survey showed a general improvement in the nutrition situation of the country between 1998 and 2003. This is evidenced by the reduction of undernutrition among various population groups. Iron deficiency anemia (IDA), however, remains to be a public health concern especially among children (6 months to one year old), and pregnant and lactating women.

The survey results provide the needed data for policy/program recommendations of short and long term solutions to national, regional/provincial nutrition and health problems.

Correlation analysis of children’s nutritional status, dietary intakes and psycho-social development and pregnant & lactating mothers’ dietary intakes and caregiving practices, and correlation analysis of non-nutritional risk factors due to cardiovascular diseases (CVD) were conducted.

Other R&D efforts of the Institute focused on the development of nutritional and functional foods, iron and zinc absorption from rice, establishment of sustainable feeding centers, among others. A formative research on meat and egg consumption was also conducted to generate an information base for a campaign to increase meat and egg consumption in the country.
Highlights

BEAT THE ODDS through promoting S&T development program... The FNRI fully recognizes the power of education, especially now that world economies are knowledge-driven. The Institute continued to strengthen and improve its information and communication technology capabilities to serve the increasing demands of research, communication and networking. It is involved in three ICT projects, namely: e-Nutrition, TACIS (Test Analysis and Calibration Information System) and the Philippine e-Library. The FNRI website continued to feature the Institute’s latest R&D findings and technologies. A new feature of the website was added in 2004 which is an on-line feedback form thereby making the website more user friendly. The FNRI library database can also be easily accessed through the website.

One of FNRI’s credos is to provide accurate and up-to-date information to its clients. The Institute regularly disseminates its research findings and recommendations. It remains as one of the active and top-performing agencies of DOST in terms of media exposure. For 2004, the FNRI was able to gain tri-media mileage which when translated to peso value amounts to P5,288,050.95. This was realized due to its strong media partnership that has been nurtured over the years. The Institute produced 81 media releases, arranged 52 broadcast and personal interviews, participated in seven (7) S&T exhibits and Media Core activities. The Institute continued to develop and produce IEC materials, of which a total of 10 were developed, 5 were published, and 25,262 copies were disseminated to FNRI’s various stakeholders. It also continued to maintain and strengthen its various networks.

As part of FNRI’s commitment to render S & T services to its various clientele, 402 clients were served through the Institute’s consultancy program, and 2,254 from agencies and firms. NUTRINET member institutions, students and other library users were attended to by the FNRI library.

The Nutrition Information Network (NUTRINET) of FNRI continued to be strengthened. The NUTRINET is a network of 24 nutrition libraries where the major bulk of food and nutrition information being promoted, is in support of and related to agriculture and fisheries, among others.

In keeping with its tradition, the FNRI continued to hold its annual Seminar Series of Food & Nutrition R&D and S&T activities. The 30th Seminar Series with the theme, “Food and Nutrition Researches: Bridging the Gap between Policies and Nutrition Information”, recognized the importance of scientific evidence in minimizing the risks of failure which may adversely affect nutrition improvement. The seminar spotlighted the initial results of the 6th National Nutrition Survey (NNS) of 2003 in the 2nd Dr. Conrado R. Pascual Memorial Lecture. The NNS results serve as a guide to the national leadership in drafting future food and nutrition programs and policies.
Managing Financial and Human Resources ... The FNRI had a total allotment of Php 93.34 million in 2004 under The General Fund, inclusive of other releases. Of this, 57% was used for personal services, 14% for maintenance and other operating expenses, and 29% for capital outlay. By program/project/activity, 37% was spent for R&D, 5% for science promotion, 2% for technical services, 33% for information services especially for e-Nutrition and 24% for general administrative and support services. Under the DOST Grants-in-Aid and external funds, a total of Php 15.09 million was granted to FNRI.

Of the 198 regular FNRI personnel, 153 are females and 45 are males. By educational attainment, 9 have Ph.D.s., 43 have Masteral, 122 have Bachelor degrees, and 24 have technical diplomas and certificates on top of their baccalaureate degrees. Formal training is on-going; 7 employees are currently pursuing their doctorate degrees and 26 are presently continuing their master’s studies in the fields of nutrition, food science, public health, chemistry, microbiology, statistics, applied science, communication, economics, and public administration. By activity, 92 are engaged in R&D activities, 4 in technology delivery, 7 in information services, 28 in technical services, 25 in support services, and 42 in general administration services.

Future Directions ... The FNRI’s priorities in food and nutrition projects in the coming year are in support of President Gloria Macapagal Arroyo’s 10-Point Agenda. Guided by its firm belief that nutrition is a human right, the FNRI will relentlessly focus its R & D programs by regularly monitoring the nutritional status of the country, providing bases for the development/improvement of nutrition intervention programs, rendering technological assistance to SMEs and improving public awareness on food and nutrition through its multi-media efforts.
The DOST’s Small Enterprises Technology Upgrading Program (SET-UP) is a nationwide strategy to encourage and assist the local micro, small and medium scale business firms to implement technological innovations and improvements in their operations. The program enables the firms to address their technical problems through DOST technology transfer and technical interventions.

Interventions on technology application and upgrading are focused on five (5) industry sectors. Since processed foods and beverages are among the country’s export products, the food processing sector is covered by SET-UP.

### 1. Commercialized Technologies

In support of the DOST’s technology transfer program and the SET-UP, the FNRI was able to commercialize three (3) of its developed food technologies. The transfer of these technologies were formally forged through the signing of 3 Memoranda of Agreement (MOA). FNRI technical assistance and support to manpower development for the three (3) technology adoptors were made available. Such were envisioned to enhance the companies’ production viability.

<table>
<thead>
<tr>
<th>TECHNOLOGIES COMMERCIALIZED IN 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Commercialized</td>
</tr>
</tbody>
</table>
| Iodine-rich Drinking Water | Blue Petals Aquasystems  
Jaro, Iloilo City |
| Vitamin A-fortified Sugar Premix | First Sugar Corporation  
Malate, Manila |
| Iron Rice Premix | Superlative Snacks, Inc.  
Paco, Manila |

Memorandum of Agreement (MOA) signing between FNRI and Superlative Snacks, Inc.
2. Diffused Technologies

The FNRI also diffused 27 food and nutrition technologies to 1,033 prospective technology adoptors composed of entrepreneurs, non-government organizations (NGOs), farmers and homemakers.

![Green Mango-Nata Fruit](image1)

![Instant Kalamansi Extract](image2)

3. S&T Services

a. **Laboratory and Testing Services**

In September 2004, the FNRI’s Food Processing Center was granted the License-to-Operate by the Bureau of Food and Drug (BFAD). The Institute’s Food Analytical Service Laboratory (FASL) is also one of the recognized BFAD laboratories for chemical and microbiological testing.

The FNRI together with the Metals Industry Research and Development Center (MIRDC) assisted the Department of Science and Technology Regional Science and Technology Laboratories (DOST RSTL) to gain ISO/IEC 17025 accreditation through project “Quality Management Systems for the DOST Regional Analytical Laboratories in Conformance with ISO/IEC 17025” which was completed in 2004. The project involved five (5) phases including documentation, organization, and implementation of quality system in all DOST regional laboratories. To date, four (4) DOST Regional Laboratories have been granted ISO/IEC 17025 accreditation. Regions IX, X, and XI have been accredited for their Microbiology and Chemical Laboratories while Region VII has been accredited for its Microbiology Laboratory only. The remaining Regional Laboratories are still complying to ISO requirements and still preparing for application for BPS ISO/IEC 17025 accreditation.

All the laboratories demonstrated high potential abilities to be accredited if given the necessary resources and funds. Some critical constraints (e.g. heavy and varied staff workload), however, need to be immediately addressed.
S&T Services

Accredited laboratories are technically competent in the scope of test and will generate accurate and valid data which are considered comparable worldwide. The FASL also gained renewal of Certificate of ISO/IEC 17025 accreditation last February 2004.

ISO/IEC 17025 Certificate of Accreditation

Through its testing and technical services, the FNRI was able to serve 232 clients for 2004. These services generated a total income of P798,360.00 for the Institute. In addition, an income of P33,619.05 was generated from sales of FNRI books and pamphlets.

<table>
<thead>
<tr>
<th>Types of Services Rendered</th>
<th>Number and Types of Clients Served</th>
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<tbody>
<tr>
<td><strong>Testing services</strong> (e.g. analysis of food, feed, water and biological specimens)</td>
<td>232 food manufacturers, students, professionals, businessmen, among others.</td>
</tr>
<tr>
<td><strong>Technical services</strong> (e.g. technology business incubator, product development and technology transfer, among others)</td>
<td></td>
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b. Consultancy Services

The Institute’s consultancy services, i.e. regular counseling of clients (oral or written) regarding food and nutrition matters is a continuing activity of the Institute.

| Types of Services Rendered | |
|---------------------------| |
| among others              | |
4. S&T Information Dissemination and Promotion

a. Promoting Science and Technology

Nutrition communication aims to elicit behavioral changes and encourage people to try, adopt and sustain new behavior relating to food and nutrition. One of FNRI’s thrusts is to provide accurate and up-to-date information to its clients. The Institute regularly disseminates its research findings and recommendations. It remains as one of the active and top-performing agencies of DOST in terms of media exposure. For 2004, the FNRI was able to gain tri-media mileage amounting to P5,288,048.94. The Institute produced 81 media releases, arranged 28 broadcast and personal interviews, participated in seven (7) S&T exhibits and Media Core activities, developed ten (10), published five (5) & distributed 25,262 IEC materials and maintained and strengthened its various networks.

<table>
<thead>
<tr>
<th>2004 TRI-MEDIA MILEAGE</th>
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<tbody>
<tr>
<td><strong>Mileage per publication</strong>*&lt;sup&gt;1,2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Newspaper</td>
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<tr>
<td>Philippine Daily Inquirer</td>
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<tr>
<td>Manila Bulletin</td>
</tr>
<tr>
<td>Philippine Star</td>
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<tr>
<td>The Manila Times</td>
</tr>
<tr>
<td>Manila Standard</td>
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<tr>
<td>Business World</td>
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<tr>
<td>Today</td>
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<tr>
<td>Tempo</td>
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<tr>
<td>People’s Journal</td>
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<tr>
<td>Baby Magazine</td>
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<tr>
<td>Women’s Today</td>
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<tr>
<td>Mr. &amp; Mrs. Magazine</td>
</tr>
<tr>
<td>Sun Star</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
</tr>
<tr>
<td><strong>Mileage per station</strong>*&lt;sup&gt;3,4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Television</td>
</tr>
<tr>
<td>ABS CBN 2</td>
</tr>
<tr>
<td>ABC 5</td>
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<tr>
<td>GMA 7</td>
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<tr>
<td>IBC 13</td>
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<tr>
<td>STUDIO 23</td>
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<tr>
<td><strong>Sub-Total</strong></td>
</tr>
<tr>
<td>Radio</td>
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<tr>
<td>DWWWW</td>
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<td>DWIZ</td>
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<td>DZEC</td>
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<td>DZEM</td>
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<td>DZMM</td>
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<td>DZRH</td>
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<td>DZRM</td>
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<tr>
<td>DZRV</td>
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<tr>
<td><strong>Sub-Total</strong></td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
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<sup>1</sup> Monitoring based on FNRI’s limited access to newspapers and magazines.

<sup>2</sup> Publication costs for Manila Observer and Panorama where FNRI media releases were also published cannot be computed due to unavailable rates.

<sup>3</sup> Broadcast monitoring report for July-December 2004 only.

<sup>4</sup> Monitoring based on FNRI’s limited access to broadcast exposure and fluctuating costs of airtime.
The following FNRI R&D results were published in several


c. Information Services

The library through its collection of reference materials attended to 2,254 clients.

<table>
<thead>
<tr>
<th>Types of Services Rendered</th>
<th>Number and Types of Clients Served</th>
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<tbody>
<tr>
<td>Library Services</td>
<td>2,254 coming from agencies and firms/industry employees, NUTRINET members, students, professionals, members of the academe, researchers, among others.</td>
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<tr>
<td>Food and nutrition sciences, researches and other related topics</td>
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d. Training

The FNRI conducted 30 health and nutrition services and livelihood trainings under its project “Establishment of School/Community-Based Supplementary Feeding Program: Metro Manila”. The seminars and trainings benefited 1,169 participants, particularly mothers, barangay health workers and barangay nutrition scholars in seven (7) areas of Metro Manila.

Livelihood trainings conducted by FNRI
R&D Results Used for Productivity and New Wealth Creation

1. Technology Incubation for Commercialization (TECHNICOM) Program

DOST’s Technology Incubation for Commercialization (TECHNICOM) Program provides a mechanism to fast track commercial application of innovative technologies developed by the S&T community. Assistance is provided to innovations in food fortification, medicine, metals industry, and construction.

Extruded Rice Premix in Aluminum Foil and Polyethylene Packaging

On July 2004, the technology for the production of Iron Premix Rice (IPR) was commercialized and transferred to Superlative Snacks, Inc. The FNRI-developed technology used the extrusion method. The IPR is blended with ordinary rice at a proportion of 1:100 to obtain iron-fortified rice (IFR).

The iron content of the IPR is 660 mg/100 g while the iron-fortified raw rice has an iron content of 6.34 mg/100 g. These meet the required iron level as permitted in the IRR of the Food Fortification Act of 2000 (RA 8976). Cooked IFR has an iron retention of 3.15 mg/100g. Sensory evaluation showed that the cooked fortified rice was “liked moderately” to “liked very much” by the panelists.

Based on a one-year production, total manufacturing cost of IPR is estimated at ₱11,419,527.00. The proposed selling price of the premix with a 35% mark-up is ₱0.48 per 10g pack.
2. Conduct of National Nutrition Surveys

In support of creating a more conducive S&T policy environment, the Food and Nutrition Research Institute regularly conducts the National Nutrition Survey (NNS) and the Regional Updating of Nutritional Status of Filipinos every two or three years.

The first mandate of FNRI, geared towards defining the citizenry’s nutritional status, was effectively carried out through the conduct of the 6th National Nutrition Survey (NNS). The 6th NNS done in 2003 was the first attempt to adopt the Master Sample of the National Statistics Office (NSO) for the 2003 Family Income and Expenditure Survey (FIES), Labor Force Survey (LFS) and the National Demographic and Health Survey (NDHS). The use of the Master Sample allowed linking data sets of various surveys for maximum use.

The survey covered 17 regions of the country, at most 5,520 households and 25,897 persons. There were 808 survey areas that were drawn from the 75 provinces of the country and 17 cities/municipalities of Metro Manila. A survey area comprised one or more barangays.

The results of the NNS have far-reaching influences in formulating and implementing several development-oriented policies and action programs of the government. To wit, the Philippine Plan of Action for Nutrition (PPAN) is primarily anchored on the NNS results. The results of the anthropometric survey is also used in monitoring the Institute’s commitment to the Millenium Development Goal (MDG) on health and nutrition particularly the prevalence of underweight children.

a. Anthropometric Nutrition Survey

Results showed a general improvement in the nutritional status of Filipino children between 1998 and 2003. The prevalence rate of underweight children decreased between the five year period. However, the improvements attained were rather slow, indicating that malnutrition still persists. On the other hand, an increasing trend in overweight and obesity among adults and children was also seen.

The nutritional status of children

- Underweight: 11.7%
- Overweight: 1.4%
- Normal: 69.5%
- Tall: 16.4%


Researcher weighing subject
b. Anemia and Iodine Deficiency Disorders

The 6th NNS showed that iron deficiency anemia (IDA) is still a public health concern, particularly among infants, six months to less than one year, pregnant and lactating women. The prevalence of anemia among infants is alarmingly high at 66% compared to the previous survey (5th NNS, 1998) which was 56.6%.

![Researcher collecting blood sample from subject](image1)

![Prevalence of anemia among children: 1998 and 2003](image2)

The iodine status of children, on the other hand, has improved in 2003. This is indicated by the higher median urinary iodine excretion (UIE) of 201 µg/dL and only 11% with <50 µg/dL UIE. This is a better picture compared to 1998 when the median UIE was 71 µg/dL and 35.8% of children had < 50 µg/dL UIE. A 23.7% proportion of lactating women with <50 µg/dL UIE, however, indicate that there are still pockets of moderate to severe iodine deficiency disorder (IDD) affecting this population in 2003.

![Collection of urine sample](image3)

![Prevalence of moderate to severe Iodine Deficiency Disorder (IDD) in children: 1998 and 2003](image4)
c. National Food Consumption Survey

A major component of the 6th NNS, the Food Consumption Survey (FCS) was conducted to provide official updates on overall food consumption and nutrient adequacy in Filipino household and among selected at risk population groups specifically 0-5 year old children, pregnant and lactating women. The component also looked at the availability and consumption of fortified foods, to provide baseline information to assess the impact of food fortification program in the country.

The FCS fills a 10-year-gap on official data of food intake of Filipino households. Overall results showed general improvements in household diets compared to the 1993 FCS data particularly in terms of increased quantity of intake of most food groups except for fruits. The 2003 FCS also showed a higher contribution of animal foods to total food and protein intake and an increased intake of energy and all nutrients except iron and vitamin C.

Consumption of fortified foods is high at 99%, even if only a few (16%) knew the Sangkap Pinoy Seal (SPS). Based on a consumption rate of at least once a week, SPS fortified snack foods and instant noodles topped the list. The most consumed fortified products were snack food products and instant noodles. The study also showed that after more than eight years of implementation of the Asin Law, 56% of household use iodized salt. The 6th NNS-FCS had a response rate of 97% of the targeted enumeration areas (786) and 92% of targeted households (3,044).

Note: The CVs for mean intake by food group are all <10%.

Mean one-day per capita food intake by food groups, 2003
d. National Nutrition and Health Survey (NNHeS: 2003)

The NNHeS: 2003 is the clinical component of the 6th NNS. It is the first systematic attempt to determine the national prevalence of obesity, hypertension, diabetes, dyslipidemia, angina and strokes, among Filipino adults. Major findings of the survey revealed the following:

<table>
<thead>
<tr>
<th>Prevalence of Dyslipidemia</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cholesterol ≥ 200</td>
<td>28.0</td>
</tr>
<tr>
<td>Total Cholesterol ≥ 240</td>
<td>8.5</td>
</tr>
<tr>
<td>LDL-Cholesterol ≥ 130</td>
<td>31.5</td>
</tr>
<tr>
<td>LDL-Cholesterol ≥ 160</td>
<td>11.7</td>
</tr>
<tr>
<td>LDL-Cholesterol ≥ 190</td>
<td>3.7</td>
</tr>
<tr>
<td>HDL-Cholesterol ≤ 40</td>
<td>54.2</td>
</tr>
<tr>
<td>Triglycerides ≥ 150</td>
<td>20.6</td>
</tr>
<tr>
<td>Triglycerides ≥ 200</td>
<td>9.4</td>
</tr>
</tbody>
</table>

* LDL - low density lipoprotein
* HDL - high density lipoprotein

<table>
<thead>
<tr>
<th>Prevalence of Hypertension</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>History (+)</td>
<td>13.7%</td>
</tr>
<tr>
<td>SBP &gt; 140 or DPB &gt; 90</td>
<td>22.5%</td>
</tr>
<tr>
<td>BP or History</td>
<td>27.4%</td>
</tr>
<tr>
<td>True Prevalence</td>
<td>17.4%</td>
</tr>
</tbody>
</table>

* SBP - systolic blood pressure
* DBP - diastolic blood pressure

| Prevalence of Obesity (BMI cut-off) by Sex | | |
|------------------------------------------|------------------------------------------|
| Sex                                      | Body Mass Index                        | Prevalence (%) |
|------------------------------------------|------------------------------------------|
| Males                                    | BMI 25.0 - 29.9                         | 18.8          |
|                                          | BMI > 30                                | 3.2           |
| Females                                  | BMI 25.0 - 29.9                         | 6.6           |
|                                          | BMI > 30                                | 0.5           |
| Both                                     | BMI 25.0 - 29.9                         | 19.6          |
|                                          | BMI > 30                                | 4.9           |

*BMI - Body Mass Index
e. Special Surveys on Child Development

A baseline survey on early childhood development was conducted by FNRI-DOST in 2000. The survey focused on the nutritional status and psycho-social development of children in nine (9) ECD provinces and selected non-ECD areas. The nature and wealth of data permitted an analysis that explained the incidence of poor nutritional status, poor dietary intake, and poor psycho-social development in children. The dietary intake of pregnant and lactating mothers as a major determinant of early child development was also explored.

**Psycho-social Development of Children**

The first study of the project looked into the psycho-social development of children in the context of differing environment and nutrition and socio-economic conditions. This was done to give an overview of the child’s growth and development. The children were classified as “delayed” or “not delayed” according to the four (4) psycho-social domains using the Child Development Index tool developed by the University of the Philippines-College of Home Economics. Results indicated that different sets of factors need to be considered in order to target a specific psycho-social domain. However, malnutrition, poverty, and schooling are risk factors that are common for all domains.

**Feeding Practices of Children**

The second study looked into the relationship between the type of feeding practices of 0-23 month old children and selected maternal/caregiver’s characteristics, household socio-economic variables, environmental condition and nutritional status. The results of the study emphasized the need to strengthen existing nutrition education among mothers/caregivers (i.e. importance of exclusive breastfeeding for the first six months) as well as weight monitoring to immediately address growth faltering. Results found that breastfeeding was negatively associated with both per capita monthly household income and food expenditure. The level of the education of the mother was inversely related with breastfeeding but positively related with milk feeding alone or giving milk with other foods.
Determinants of Children’s Nutritional Status

This study determined the effects of program-specific determinants of wasting and stunting as basis for designing/modifying the ECD program. Significant determinants of children’s nutritional status included exclusive breastfeeding and age of introduction of complementary foods. Participation in Operation Timbang and Araw ng Sangkap Pinoy was also found important. The child’s energy and nutrient intake together with the income of the household to which these children belonged likely determined what they would become in terms of nutritional status. The study revealed that exclusive breastfeeding up to 6 months and the child’s age when complementary foods are introduced among 0-35 month-old children remain to be the significant determinants of children’s nutritional status.

Determinants of Dietary Intake of Pregnant and Lactating Mothers

The fourth study was designed to provide baseline information on the nutritional status and psychosocial development of 0-6 year old children and the nutritional condition of pregnant and lactating mothers. Results showed that the diets of pregnant and lactating mothers were cereal-based and nutritionally adequate in energy, protein, iron, vitamin A and calcium. Results showed that there was an increase in the food intakes for both pregnant and lactating women from 1993 to 2003 but these intakes still remained inadequate. In terms of nutrient intake, food intakes for both were adequate only for niacin. Intakes for protein, vitamin A, vitamin C, calcium, thiamin, and riboflavin were inadequate and grossly inadequate for iron.

Mother breastfeeding her infant
3. R&D Programs

Strategic R&D programs in support of the Food Fortification Law were conducted on fortification of margarine. A study on the effects of iodized salt on the quality of selected processed food products was also done in 2004. The Institute likewise developed the technology on the production of fresh *miki* noodles with squash.

The FNRI, in collaboration with the San Pablo Manufacturing Corporation (SPMC) developed a technology in *fortifying margarine* with vitamins A and B1, iron, iodine and omega-3 and -6 fatty acids. The vitamins A and B1, iron and iodine were retained in the margarine during storage in the different trials conducted. The product was found to be acceptable based on the 7-Point Hedonic Rating Scale and there was no significant difference observed during the 10-month storage. With the addition, however, of omega-3 and -6 fatty acids to the fortified margarine, the product was found acceptable only at the early part of storage and a significant difference was observed at the middle part of the storage period. The fortified margarine was found acceptable by the taste panelists. The results of this study can be used as basis for the commercial production of margarine fortified with vitamin A, B1, and iodine.

**Fortified margarine**

**Puto with fortified margarine**

*Fresh miki noodle* with squash was developed by FNRI. The product was found to be stable for 15 days at room temperature in terms of nutritional, sensory and microbiological components when packed in nylon polyethylene (vacuum pack) bags. A 30-gram serving of the fresh *miki* noodle with squash contains 256 µg vitamin A, making the product a very rich source of vitamin A. The product packed in a vacuum nylon polyethylene bag was generally rated acceptable with a score of 6.0 using the 7-point Hedonic Rating Scale.

**Fresh miki noodle with squash**
The prevalence of iodine deficiency disorders (IDD) and the lack of hard evidence on the use and effects of iodized salt in processed foods prompted the FNRI to conduct a study on the effects of iodized salt on the quality of selected processed food products. The generated data will benefit SME food processors and other stakeholders because as mandated by RA 8172 (Asin Law for the use of iodized salt in processed foods), it is the processors’ responsibility to show burden of proof of any prejudicial effect of iodized salt.

Results of the study showed that food products with iodized salt have significantly higher iodine content per serving size (74-318 mg; equivalent to 50-212% RENI for iodine of an adult) than samples with uniodized salt (4-56mg; 3-37% RENI) except for iodized pickled cucumber which can only supply 10% of RENI.

The results of the study also revealed that iodized salt affected the fermentation time of cucumber, small shrimps (alamang) and anchovies (dilis). It has, however, no significant effect on the pH, water activity and moisture content of the test food products. The color of dried dalagang-bukid, tocino, hotdog, sweet ham, sautéed shrimp paste and pickled cucumber with iodized salt was enhanced compared with food sample with uniodized salt.
In response to FNRI’s second mandate to **develop recommendations for the improvement of nutritional status**, the Institute implemented R&D projects as alternative solutions to alleviate the present nutritional problems of the country.

In answer to the continuing problem on IDA which affects 31% of the Filipino population, the **absorption of iron and zinc from rice** was studied. Availability of the two (2) minerals from brown and milled rice was investigated. Results of the study showed that brown rice had significantly greater protein, fat, and dietary fiber, and ash content than milled rice. Total iron and zinc contents were also higher in brown rice compared to milled rice. Brown rice has significantly lower iron and zinc availability than milled rice of the same variety.

A model for supplementary feeding program was studied in Metro Manila. The project was in partnership with the Filipinos for the Advancement of Resource and Manpower (FARM), Inc. Foundation. The feeding program was school/community-based. It covered 120 feeding days in which hot lunches or snacks were served. The meals provided about 1/3 of RENI for children. A livelihood training program for parents of children-participants and health workers was also conducted. Such were meant to equip the adults with skills that would help in seeking employment opportunities.

An improvement in the nutritional condition and behavior of children was seen after the feeding program.

School children being served hot lunches
Risk factors for the development of cardiovascular diseases (CVD), specifically hypertension and android obesity were studied among 4,541 randomly selected adults (20 years and over). The data was taken from the 1998 NNS.

Findings of the study showed that Filipinos were found to be at greater risk of developing hypertension as age increased. The risk was higher among overweight males with high triglyceride levels. Men with high (>1.0) waist-hip ratio (WHR) and women with large waist circumference (>88cm) were also of greater risk. Adult males (40 years and over), with high triglyceride and FBS levels were found to be at greater risk of being android obese.

Alcohol drinking and smoking were both significantly correlated with hypertension. Alcohol drinking alone, on the other hand, was found to be significantly correlated with android obesity. The findings suggest the need to advocate and adopt interventions aimed at achieving healthy lifestyles.
**Basal metabolic rate (BMR)** using the 1985 FAO/WHO/UNU equation table, of 47,116 individuals who were subjects of the 5th NNS was determined. The highest and lowest BMR values were noted among the 30-60 years and 0-10 years age group, respectively. The BMR increased as the age increased until the age of 60, after which it decreased. This may be due to changes in the thyroid hormone concentration or differences in metabolically active tissue or fat free mass, among others. The BMR values derived from the study will serve as important inputs in setting up the energy requirements and physical activity levels (PAL) for Filipinos.

Dietary intake of adults from the study on nutrition and CVD risk factors were re-analyzed to compare nutrient intake from the food frequency questionnaire against the 24-hour food recall. Results showed that intakes of subjects taken by the 24-hour food recall were higher in nutrient values compared to the food frequency method.

**Iron and calcium availability from foods with and without vinegar and foods with vinegar with and without citric acid** was undertaken. Findings of the study showed that the addition of vinegar to all the test foods increased the availability of iron. The addition of 10% citric acid to vinegar further improved iron availability from foods. In the case of calcium, the addition of vinegar increased availability significantly from pork, slightly in *kangkong*, and no increase from *bangus*.
The FNRI puts importance in disseminating research findings and recommendations to its stakeholders. The Institute continuously strengthens and improves its communication and promotion capabilities. Such efforts are directed towards ensuring that only accurate data and correct information emanate from FNRI.

A formative research on meat and egg consumption was conducted to build a qualitative information base for a communication campaign to promote the consumption of meat, eggs and related products. It was conducted in a municipality from each of three provinces selected from Luzon, Visayas and Mindanao with a rural and urban barangay. Participants included mothers, school children and sellers of meat, eggs and related products. Focus group discussions (FGDs) and key informant interviews (KIs) were used to collect data.

Strategies to promote meat and egg consumption suggested by frontline workers included educating the masses on the value of meat, ensuring uniformity and conformity of meat campaigns and tapping traditional and new channels of promotion in the community and mass media, among others.

The study on the evaluation of a nutrition education program for Grades 1-3 school children in an exclusive school in Manila: year I was conducted. Results showed an improvement in the mean nutrition knowledge and nutrition practice scores of the schoolchildren and their parents in both baseline and end line surveys. High nutrition knowledge levels among schoolchildren and their parents were also observed. Medium levels of nutrition practice, on the other hand, in both groups were also noted. The study recommends incorporating an intensive nutrition education program in the school’s curriculum to improve nutrition knowledge and practice of both children and parents.
The study on the effectiveness of communication channels in promoting the Nutritional Guidelines for Filipinos (NGF) among mothers in Metro Manila health centers showed that the NGF calendar is a key nutrition education strategy in improving the nutritional status of Filipinos. The findings showed that the NGF calendar was effective in terms of improving NGF knowledge but not practice. Regardless of intervention, NGF knowledge was significantly related with mother’s education and NGF practice with age of the reference child.
4. Research Contracts

A total of eleven (11) contract researches were entered into by FNRI and several government agencies, international institutions, professional organizations and the food industry, which amounted to P10,070,886.08.

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Cooperator</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Industry-Related</strong></td>
<td></td>
<td></td>
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<tr>
<td>1. Effects of Iodized Salt on the Quality of Selected Food Products</td>
<td>Department of Social Welfare and Development (DSWD)</td>
<td>P543,810.50</td>
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<tr>
<td>2. Technology Generation of Margarine Fortified with Vitamin A &amp; B&lt;sub&gt;1&lt;/sub&gt;, Iron, Iodine, and Omega 3 &amp; 6</td>
<td>Philippine Council for Health Research &amp; Development (PCHRD) and San Pablo Manufacturing Corporation</td>
<td>P 7,000.00</td>
</tr>
<tr>
<td><strong>I. Nutrition Intervention (Policy/Program) Related</strong></td>
<td></td>
<td></td>
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<tr>
<td>. Iron and Zinc Absorption from Brown Rice</td>
<td>Philippine Rice Research Institute (PRRI)</td>
<td>P357,130.50</td>
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<tr>
<td>. Correlation Analysis of Children’s Nutritional Status and Dietary Intake</td>
<td>Department of Social Welfare and Development-Children’s Welfare Center (DSWD-CWC)</td>
<td>P230,528.08</td>
</tr>
<tr>
<td>. 6th National Nutrition Survey: Food Consumption</td>
<td>Early Child Development (ECD)</td>
<td>P750,000.00</td>
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<tr>
<td>. 6th National Nutrition Survey: National Anemia Survey (Phase II Folate)</td>
<td>Department of Science and Technology (DOST)</td>
<td>P3,000,000.00</td>
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<tr>
<td>. 6th National Nutrition Survey: Clinical Survey</td>
<td>Department of Health (DOH)</td>
<td>P3,500,000.00</td>
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<tr>
<td>. A Study of the Food Consumption Nutrition Status and Energy Expenditure of the Filipino Elderly</td>
<td>International Atomic Energy Agency (IAEA)</td>
<td>P 245,817.00</td>
</tr>
<tr>
<td>. Evaluation of a Nutrition Education Program for Grades 1-3 School Children in an Exclusive School in Manila: Year I</td>
<td>Philippine Association for the Study of Overweight and Obesity (PASOO)</td>
<td>-</td>
</tr>
<tr>
<td>. Formative Research on Meat and Egg Consumption</td>
<td>National Nutrition Council (NNC)</td>
<td>-</td>
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<tr>
<td>. Kineti-Kids: A Fitness Program for School Children</td>
<td>The Coca-Cola Export Corporation</td>
<td>P1,436,600.00</td>
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<tr>
<td></td>
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</tbody>
</table>
Information & Communication Technology

In keeping abreast with the ever-increasing demands of the information and communication technology (ICT) sector, the Institute continued to strengthen and improve its ICT capabilities. These were done to better serve FNRI’s research & development, communication and networking needs.

For 2004, three (3) ICT projects were started.

The e-Nutrition will establish the Philippines’ knowledge center on food and nutrition. A nutrition information system on the FNRI National Nutrition Survey will be the main feature of this program. The e-Nutrition is funded by the Commission on Information and Communications Technology (CICT).

The TACIS (Tests, Analyses and Calibration Information System) Project, on the other hand, is a collaboration among seven (7) DOST R&D institutes and 15 regional offices. The project will develop an interactive information system that will facilitate the processing of tests, analyses and calibration services of DOST. For 2004, preliminary systems analysis and design was undertaken.

The FNRI is a contributor to the Philippine e-Lib project. It aims to give the Filipino people access to the wealth of information available not only in the Philippine libraries but in the world. The P166-million web portal (www.elib.gov.ph) has a collection of more than 800,000 bibliographic records. One thousand seven hundred ninety (1,790) bibliographic records were taken from FNRI. By next year (2005), two (2) kiosks will be provided to the Institute to enable its clients to have access to e-Lib.

ICT systems development at FNRI involved the implementation and pilot-testing of the Human Resource Information Management System (HRMIS). This was provided by DOST to all its agencies and councils.

Updating of the FNRI website (http://www.fnri.dost.gov.ph) continued in 2004. The hit counter intended for monitoring visitors and the on-line feedback form was added to the website. It also continued hosting and updating the Philippine Association of Nutritionists, Inc. (PAN) and Nutrition Research Information Network (NUTRINET) websites.

As part of its manpower development, three (3) in-house trainings on ICT-related topics were conducted with a total of 43 FNRI staff who attended the training.
The FNRI continued to establish, forge and strengthen partnerships with both foreign and local agencies/institutions and individuals in its food and nutrition projects and activities.

The following linkages with various institutions were developed in the implementation of the Institute’s projects on food fortification, food analyses, mycotoxin/food safety, proficiency testing, intellectual property rights, and food and nutrition, communication and human resource development:

### International

<table>
<thead>
<tr>
<th>Institution</th>
<th>Collaborative Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Atomic Energy Agency Institute of Food Research - United Kingdom</td>
<td>Iron and Zinc Absorption from Brown Rice/ Brown Rice-Based Meal and Milled Rice/ Milled Rice-Based Meal of the Same Variety</td>
</tr>
<tr>
<td></td>
<td>Calcium bioavailability and bone metabolism among Filipino children from a school-based milk feeding program</td>
</tr>
<tr>
<td>Food and Agriculture Organization (FAO)</td>
<td>Nutritional and Health Benefits of Local Rootcrops and Legumes: Cholesterol-lowering Effect (and other functional foods)</td>
</tr>
<tr>
<td>Taiyo Kagaku Co., Ltd. - Japan</td>
<td></td>
</tr>
<tr>
<td>Meiji Kaisha Seika, Ltd. - Japan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Production and Evaluation of Vitamin A Fortified Sugar produced by Victorias Milling Corporation, Inc.</td>
</tr>
<tr>
<td>Neys-van Hoogstraten Foundation</td>
<td>Availability, Access and Perception of Nutrition Programs, Among Selected Urban Poor and Indigenous, Upland Farming Households</td>
</tr>
<tr>
<td>International Life Science Institute, Center for Health Promotion (ILSI CHP)</td>
<td>Stability of Iron Fortified Rice (Japanese and Philippine IFR)</td>
</tr>
</tbody>
</table>
### Local Institutions and Collaborative Projects

<table>
<thead>
<tr>
<th>Institution</th>
<th>Collaborative Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippine Rice Research Institute (PRRI)</td>
<td>Iron and Zinc Absorption from Brown Rice/ Brown Rice-based Meal and Milled Rice/Milled Rice-Based Meal of the Same Variety</td>
</tr>
<tr>
<td>Southeast Asia Food Inc. (SAFI)</td>
<td>Iron and Calcium Availability from Foods with and without Vinegar and Foods with Vinegar with and without Citric Acid</td>
</tr>
</tbody>
</table>
| International Pharmaceuticals Inc. (IPI)  
  Philippine Coconut Authority (PCA)  
  Nestle Philippines  
  Monde Nissin Corp.  
  JME Food Products Corp.  
  Tri-Tea Food Products Corp. | Nutritional and Health Benefits of Local Rootcrops and Legumes: Cholesterol-lowering Effect (and other functional foods) |
| JB Orchid Pharmaceuticals Inc. | The Effect of Coconut Capsule Intake on Patients with Moderately Raised Blood Glucose, Blood Triglyceride and Blood Cholesterol (project proposal) |
| National Dairy Authority | Calcium Bioavailability and Bone Metabolism among Filipino Children from a School-Based Milk Feeding Program (project proposal) |
| Council for the Welfare of Children (CWC)  
  Office of the President through the Early Childhood Development (ECD) Project  
  Bureau of Agricultural Research (BAR),  
  Department of Agriculture | Correlation Analysis of Children’s Nutritional Status, Dietary Intake and Psychosocial Development, and Pregnant and Lactating Women’s Dietary Intake in the ECD and Non ECD Program Areas |
| Council for the Welfare of Children (CWC)  
  Office of the President through the Early Childhood Development (ECD) Project  
  RAM Food Products Inc.  
  Pampanga’s Best  
  Estrella’s Food Products | 6th National Nutrition Survey: Philippines, 2003 Food Consumption Survey, Household Level, Individual Level (0-5 years old children, pregnant and lactating mothers) |
| Department of Health  
  Philippine Lipid Society  
  Philippine Society of Hypertension  
  Philippine Diabetes Association (PDA)  
  Philippine Heart Association (PHA)  
  Philippine Pediatric Society (PPS)  
  Philippine Society of Nephrology  
  Philippine Society of Endocrinology and Metabolism  
  Osteoporosis Society of the Philippine Foundation, Inc.  
  Philippine Association for the Study of Overweight and Obesity (PASOO)  
  Philippine Neurological Association  
  Philippine Rheumatology Association  
  Philippine Society of Gastroenterology  
  Philippine Society of Asthma, Allergy and Immunology  
  Philippine College of Physician  
  UP-PGH Medical Research Unit, Adult Medicine  
  Department of Health - Non-communicable Disease Control Program | 6th National Nutrition Survey: Clinical Phase - National Nutrition and Health Survey (NNHES)  
  Comparison of Two Bio-impedance Analyzers for the Determination of Percent Body Fat  
  Philippine Coalition for the Prevention and Control of Non-communicable Diseases (Alliance)  
  Mag-Healthy Lifestyle sa Resto (Advocacy Campaign) |
# S&T Capacity Building

<table>
<thead>
<tr>
<th>Institution</th>
<th>Project Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance Science and Technology Institute (ASTI)</td>
<td>Establishment of the Philippines’ Knowledge Center on Food and Nutrition</td>
</tr>
<tr>
<td>University of the Philippines, Los Baños (UPLB)</td>
<td>Assessment of Dietary Changes and their Health Implications in Countries Facing the Double Burden of Malnutrition</td>
</tr>
<tr>
<td>Technology Incubation for Commercialization - Philippine Council for Industry and Energy Research and Development (TECHNICOM - PCIERTD)</td>
<td>Technology Diffusion of Ready to Serve Vegetables Mixes</td>
</tr>
<tr>
<td>Technology Incubation for Commercialization - Philippine Council for Industry and Energy Research and Development (TECHNICOM - PCIERTD)</td>
<td>Technology Generation and Commercialization of Enriched Rice Premix</td>
</tr>
<tr>
<td>Philippine Council for Health Research and Development and Development (PCHRD)</td>
<td>Technology Generation of Margarine Fortified with Vitamin A and D, Iron, Iodine, and Omega-3 and Omega-6 Fatty Acids</td>
</tr>
<tr>
<td>FARM Foundation</td>
<td>Establishment of School Community-Based Supplementary Feeding Program in Metro Manila</td>
</tr>
</tbody>
</table>

## City Mayors

- Mayor Lito Atienza, Manila
- Mayor Tobias Tiangco, Navotas
- Mayor Sonny Belmonte, Quezon City

## Former City Mayors

- Mayor Elenita Binay, Makati City
- Mayor Soledad Eusebio, Pasig City
- Mayor Bobbit Carlos, Valenzuela City

## City Health Officers

- Dr. Ma. Lourdes B. Salud, Makati City
- Dr. Rebecca Cristina Bailon, Tayabas Manila
- Dr. Rachel S. Marinas, District II, Manila
- Dr. Reynulfo Sy, Tondo Health Office, Manila
- Dr. Antonio Legario, Valenzuela City
- Dr. Henedina dela Cruz, Palasan Valenzuela City

## City Nutrition Officers/Coordinators

- Ms. Lormer V. Serafica, Manila
- Ms. Ma. Socorro Alma F. Gammad, Makati City
- Ms. Chona T. Castro, Navotas
- Ms. Anarina Amistoso, Quezon City
- Ms. Nora Villanueva, Valenzuela City

## School Principals

- Ms. Teresita S. Lombos, NIYES, Makati City
- Dr. Dolores delos Reyes, Bankulas Elementary School, Navotas

## Feeding Coordinators

- Ms. Estrella T. Hernandez, Tayabas Health Center, Manila
- Ms. Agipina M. Roxas, Tondo Health Center, Manila
- Ms. Aida A. Alvarez, NIYES, Makati City
- Ms. Tess Nudo, Bangkulas Health Center, Navotas
- Ms. Cecilia V. Soriano, Navotas
- Ms. Ma. Marissa C. Almario, Pasig City
- Ms. Imelda Bonode, E. Santos Health Center, Pasig City
- Ms. Nymfa Role, Batasan Hills Health Center, Quezon City
- Ms. Susan S. dela Rosa, Valenzuela City
**S&T Capacity**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Collaborative Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Coca-Cola Export Corporation</td>
<td>Kineti-Kids: A Fitness Program for School Children</td>
</tr>
<tr>
<td>International Pharmaceutical Inc. (IPF)</td>
<td></td>
</tr>
<tr>
<td>Thermogenesis Weight Management Clinic</td>
<td></td>
</tr>
<tr>
<td>Roche Diagnostic Center</td>
<td></td>
</tr>
<tr>
<td>Department of Education, Manila City Department of Education Schools</td>
<td></td>
</tr>
<tr>
<td>Mr. Antonio Manikan, Director, Pinoy May Kapansanan</td>
<td></td>
</tr>
<tr>
<td>Hon. Bella Angara Castillo, Governor of Aurora Province</td>
<td></td>
</tr>
<tr>
<td>Philippine Association for the Study of Overweight and Obesity (PASOO)</td>
<td></td>
</tr>
<tr>
<td>The Coca-Cola Export Corporation</td>
<td></td>
</tr>
<tr>
<td>International Pharmaceutical Inc. (IPF)</td>
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<td>Thermogenesis Weight Management Clinic</td>
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<tr>
<td>Roche Diagnostic Center</td>
<td></td>
</tr>
<tr>
<td>Department of Education, Manila City Department of Education Schools</td>
<td></td>
</tr>
<tr>
<td>Mr. G Natividad, Maria Makiling Coconut Researches</td>
<td>Nutritional and Health Benefits of Local Rootcrops and Legumes: Cholesterol-lowering Effect (and other functional foods)</td>
</tr>
<tr>
<td>Ms. Juanita Marcos, Manila Herbal Essential Oils</td>
<td></td>
</tr>
<tr>
<td>National Nutrition Council, Department of Agriculture (NNC-DA)</td>
<td>Formative Research on Meat and Egg Consumption</td>
</tr>
</tbody>
</table>

FNRI also continues to strengthen and forge partnerships with individuals in several of its food and nutrition-related projects and activities.

**International**

- Dr. Jayashree Arcot - University of New South Wales (UNSW), Australia
- Dr. Alex Malaspina- International Life Sciences Institute (ILSI), Atlanta, USA
- Dr. Biplab R. Nandi - FAO, Thailand
- Dr. V. Prakash - Central Food Technological Research Institute, India
- Dr. Peter SouthwellKelly - UNSW, Australia
- Dr. SF Tait - Norwich, England
- Dr. Lilian U. Thompson - University of Toronto, Canada
- Dr. Takashi Togami - ILSI, Japan
- Dr. Leah Yabao - University of Tokushima, Japan
- Dr. Shigero Yamamoto - University of Tokushima, Japan

**Local**

- Dr. Ma. Luisa B. Borja, Chairman, Committee on Canteen Administration Office, FTI Compound, Western Bicutan
- Ms. Celia C. Candano, Canteen Concessionaire, Le Menu Food Service
- Mr. Anastacio dela Cruz, Pangasinan
- Ms. Pilar de Leon, Director, Office of the Chief of Service Administration, TESDA
- Mr. Antonio B. del Rosario, Executive Director, Technical Education and Skills Development Authority (TESDA)
- Mr. Neri Formanes, Neri’s Fishing Enterprise
- Mr. Bonifacio Gatchalian, President, Worker’s Union Canteen, Armel Plastic Company
- Ms. Sheila Gonzales, Roche Diagnostic Center
- Dr. Fe Hidalgo, Undersecretary for Programs and Projects, Department of Education
- Ms. Cindy Lim, Coca-Cola Export Corporation
- Ms. Rosario F. Lopez, Windmill Food Service Manager, JAKA Foods, PNCC Canteen and CMC Canteen, Western Bicutan
S&T Capacity Building

Local

- Ms. Delia R. Jimenez, NCR Director, National Nutrition Council - DA
- Mr. Armando Mendoza Jr., Thermogenesis Weight Management Clinic
- Dr. Rebecca Morte, University of Santo Tomas (UST) Hospital
- Dr. Sandra V. Navarra - UST Hospital
- Ms. Vicvic F. Nuque, Production Manager, Food Service Department, Astra Zeneca Pharmaceuticals, Parañaque City
- Ms. Tita Claudio Reyes, Canteen Concessionaire, Johnson & Johnson, Parañaque City
- Mr. Shervin Velasco, International Pharmaceuticals Inc. (IPI)
- Dr. Irene Villasenor-UP Diliman (Natural Products)

Awards

The FNRI's book entitled Recommended Energy and Nutrient Intakes: Philippines 2002 Edition was awarded the Outstanding Book Award for 2004 by the National Academy of Science and Technology (NAST-DOST).
The FNRI’s internal audit unit prepared and accomplished the following:

- Coordinated with the Accounting Section regarding management comments as per Audit Observation Memorandum issued by the Commission on Audit (COA).

- Pre-audited all kinds of disbursement vouchers, namely: 324 purchase orders, 52 working orders, 547 regular and contractual salaries, 16 pre-Itinerary of Travel (IOT) liquidation and 960 other vouchers for payment.

- Provided assistance to the Property Section in the eligibility of suppliers as provided for in E.O. 40.

- Audited time cards against the leave cards of FNRI employees.

- Audited accumulated vacation/sick leaves of personnel who transferred, retired or resigned prior to computation of terminal leave.

- Attended FNRI Public Bidding and acted as regular member of the FNRI Bids and Awards Committee (BAC) and actively participated in the bidding activities of the Institute.
Financial and Human Resources

1. Financial Resources Management

Expenditure by Expense Class

- Personal Services: 57%
- Capital Outlay: 14%
- Maintenance & Other Operating Expenses: 29%

Expenditure by Function

- R & D: 37%
- Information Services: 24%
- General Administrative & Support Services: 33%
- Science Promotion: 2%
- Technical Services: 4%
2. Human Resources Management

For 2004, the Institute continued to send its staff to various formal and non-formal training programs.

**Trainings Attended by FNRI Staff**

The FNRI encouraged the building-up of capability by sending the FNRI technical staff and support staff on various trainings in order to enhance their skills, update knowledge, and equip the human resource for greater efficiency.

**A. Formal Training Programs (on-going)**

**Doctor of Philosophy**

- Ph.D. in Food Science  
  University of the Philippines Diliman  
  Ruby J. Apilado
- Ph.D. in Human Nutrition  
  University of the Philippines Los Baños  
  Marie T. Bugas
- Ph.D. in Sociology  
  University of the Philippines Diliman  
  Julieta B. Dorado
- Ph.D. in Human Nutrition  
  University of the Philippines Los Baños  
  Jocelyn A. Juguan
- Doctor in Public Health (Nutrition)  
  University of the Philippines Manila  
  Celeste C. Tanchoco
- Ph.D. in Development Communication  
  University of the Philippines Los Baños  
  Ma. Zorayda A. Torres
- Ph.D. in Nutrition  
  University of the Philippines Manila  
  Marina B. Vargas

**Master of Science**

- International  
  MS in Community Nutrition  
  University of Indonesia  
  Mina Grace C. Aquino
  MS in Nutrition and Health  
  Wageningen University, The Netherlands  
  Josefina T. Gonzales
- Local  
  MS Public Health  
  University of the Philippines Manila  
  Divorah V. Aguila
  MS in Microbiology  
  University of Santo Tomas  
  Marlon A. Aguinaldo
  MS in Chemistry  
  University of Santo Tomas  
  Ennata M. Avena
Financial and Human Resources Management

MS in Human Resource Management
University of Santo Tomas
Jocelyn R. Badillo

MS in Public Health
University of the Philippines Manila
Ferdinand A. Bagunu

MA in Health Policy Studies
University of the Philippines Manila
Regina C. Beleno

MS in Food Service Administration
University of the Philippines Diliman
Ellen E. Cea

MS in Environmental Science
University of the Philippines Diliman
Marilen M. Espinoza

Masters in Public Health
University of the Philippines Manila
Chona M. Fernandez

MS in Food Science
University of the Philippines Diliman
Edgar Allan M. Gustilo

MS in Applied Nutrition
University of the Philippines Los Baños
Paula C. Huelar

MS in Applied Nutrition
University of the Philippines Los Baños
Marilou L. Madrid

MS in Applied Nutrition
University of the Philippines Los Baños
Czarina Teresita S. Martinez

MS in Chemistry
University of the Philippines Diliman
Faridah A. Mercado

MS in Chemistry
University of Santo Tomas
Annalie B. Ocampo

Master in Management Technology
De La Salle University, Batangas
Ivy Marie P. Palma

Master in Business Education
Polytechnic University of the Philippines
Joana E. Ramos

MS in Chemistry
University of Santo Tomas
Rey Alfred G. Rañola

MS Microbiology
University of Santo Tomas
Marietta P. Rodriguez

MS in Chemistry
De La Salle University
Michael E. Serafico

MS in Development Communication
University of the Philippines Los Baños
Salvador R. Serrano

MS in Chemistry
University of the Philippines Diliman
Rodolfo E. Sumayao Jr.

MS in Chemistry
University of Santo Tomas
Trinidad E. Trinidad II

MS in Nutrition and Dietetics
Philippine Women’s University
Rowena E. Velasco
# Financial and Human Resources Management

## Non-formal International Training Programs Attended by FNRI Staff

<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Place</th>
<th>Organizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian-European Expertise Training for Food and Industry</td>
<td>Jan 19-23, 2004</td>
<td>Bangkok, Thailand</td>
<td>South Asian Regional Center for Research in Agriculture (SEARCA) and Kasetsart University</td>
</tr>
<tr>
<td>Symposium Workshop on Biotechnology derived Nutritious Foods-Challenges and Opportunities in Asia</td>
<td>Feb 29- Mar 1, 2004</td>
<td>Bali, Indonesia</td>
<td>International Life Sciences Institute-Southeast Asia (ILSI-SEA)</td>
</tr>
<tr>
<td>4th Asian Conference on Food and Nutrition Safety</td>
<td>Mar 2-5, 2004</td>
<td>Bali, Indonesia</td>
<td>International Life Sciences Institute-Southeast Asia (ILSI-SEA)</td>
</tr>
<tr>
<td>Interregional Training Course on Organization, Reporting and Certification Aspects of Proficiency Testing</td>
<td>March 8-19, 2004</td>
<td>Vienna, Austria</td>
<td>International Atomic Energy Agency (IAEA)</td>
</tr>
<tr>
<td>Assessment of Total Energy Expenditure and Body Composition for Older Adults with Different Lifestyles</td>
<td>March 24- April 2, 2004</td>
<td>Vienna, Austria</td>
<td>International Atomic Energy Agency (IAEA)</td>
</tr>
<tr>
<td>11th Annual General Meeting and Board of Directors Meeting</td>
<td>Apr 29-30, 2004</td>
<td>Singapore</td>
<td>International Atomic Energy Agency (IAEA)</td>
</tr>
<tr>
<td>XIVth International Congress of Dietetics</td>
<td>May 28-31, 2004</td>
<td>Chicago, Illinois, USA</td>
<td>American Dietetic Association and Dietitians of Canada</td>
</tr>
<tr>
<td>Workshop on “Strategies for Strengthening Food Testing Laboratories in ASEAN”</td>
<td>June 7-11, 2004</td>
<td>Jakarta, Indonesia</td>
<td>European Commission-Association of Southeast Asian Nations (EC-ASEAN)</td>
</tr>
<tr>
<td>3rd Southeast Asian Nutrition Leadership Training (3rd SEA-NLP)</td>
<td>Sept 6-12, 2004</td>
<td>Jakarta, Indonesia</td>
<td>SEAMEO-TROPMED Regional Center for Community Nutrition</td>
</tr>
<tr>
<td>Asia Food Safety and Technology Forum</td>
<td>Sept 23-24, 2004</td>
<td>Kuala Lumpur, Malaysia</td>
<td>Marcus Evans Group, Malaysia</td>
</tr>
<tr>
<td>Regional Expert Consultation of the Asia-Pacific Network for Food and Nutrition on Functional Foods and Their Implications in the Daily Diet</td>
<td>Nov 16-19, 2004</td>
<td>Bangkok, Thailand</td>
<td>Food and Agriculture Organization (FAO)</td>
</tr>
</tbody>
</table>
Non-formal International Training Programs Attended by FNRI Staff

<table>
<thead>
<tr>
<th>Participant/s</th>
<th>Title</th>
<th>Date</th>
<th>Place</th>
<th>Conducted by</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Mario V. Capanzana, Ph.D.</td>
<td>Training Course for Functional Foods for Asean Countries</td>
<td>Nov 22-Dec 4, 2004</td>
<td>Indonesia</td>
<td>Indonesian Institute of Sciences Research Center for Chemistry, Indonesia</td>
</tr>
</tbody>
</table>

Non-formal Local Training Programs Attended by FNRI Staff

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of conventions/training/seminars/conferences/w</th>
<th>Number of FNRI staff who attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, nutrition and dietetics</td>
<td>10</td>
<td>103</td>
</tr>
<tr>
<td>Food technology and quality assurance</td>
<td>7</td>
<td>55</td>
</tr>
<tr>
<td>Productivity and performance evaluation</td>
<td>3</td>
<td>62</td>
</tr>
<tr>
<td>Statistics and poverty diagnostics</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Communication and information dissemination</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Computer operations</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Public service work</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Others (e.g. anti-terrorism, personality development)</td>
<td>7</td>
<td>48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td></td>
</tr>
</tbody>
</table>

Training Programs Conducted by FNRI

The following training activities were also conducted by FNRI for its personnel and various clients:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of training/seminars/workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livelihood</td>
<td>32</td>
</tr>
<tr>
<td>Health and nutrition</td>
<td>21</td>
</tr>
<tr>
<td>Research methods and techniques</td>
<td>10</td>
</tr>
<tr>
<td>Food production, safety, management and quality assurance</td>
<td>9</td>
</tr>
<tr>
<td>Communication and information dissemination</td>
<td>8</td>
</tr>
<tr>
<td>Computer operations and applications</td>
<td>5</td>
</tr>
<tr>
<td>Food and nutrition program planning and management</td>
<td>4</td>
</tr>
<tr>
<td>Productivity and performance evaluation</td>
<td>3</td>
</tr>
<tr>
<td>Physical fitness and wellness program</td>
<td>2</td>
</tr>
<tr>
<td>Technology transfer and management</td>
<td>1</td>
</tr>
<tr>
<td>Human Resource</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96</strong></td>
</tr>
</tbody>
</table>
Human Resource by Educational Attainment and Gender

![Bar chart showing human resource distribution by educational attainment and gender.]

Human Resource by S & T Activity

![Column chart showing human resource distribution by S & T activity.]

Activities:
- Research & Development
- Technology Delivery
- Information Services
- Technical Services
- Technical Support Services
- General Administration Services
Committing to Future Directions

In support to the President’s 10-Point agenda elucidated in the MTPDP and MTPPAN, the FNRI will continue to embark on priority R&D programs.

The R&D programs will focus on:

- Implementation of the Food Fortification Program to combat micronutrient deficiencies;
- Development of nutritional and functional food products as alternative solution to alleviate other nutritional problems afflicting the country;
- Development of tools and standards for nutritional assessment, and
- Conduct of other strategic programs addressing both the normal, over- and under-nourished individuals.

The FNRI in keeping with its mandate, will continue to conduct periodic health and nutrition surveys to assess the citizenry’s nutritional status, develop and recommend policy options to program/policy-makers for implementation by appropriate agencies and disseminate its findings and recommendations to relevant end-users.

The Institute will also continue to render technological assistance to SMEs. This is by way of its nationwide technology transfer and commercialization of nutritional food products and technologies and nutritional food processing service center. The Food Analytical Service Laboratory (FASL) of the FNRI will continue to serve other government agencies, industry/private sector, and the general public as well.

Moreover, FNRI will continue to support and harness information and communication technology (ICT) through its e-nutrition, test analysis and calibration information system (TACIS), and e-library programs.
FNRI Executive Officials

CORAZON VC. BARBA, Ph.D.
Director

ROGELIO A. PANLASIGUI, Ph.D.
DOST Undersecretary and Officer-in-Charge, Office of the Director
(July 12, 2004 - September 5, 2004)

GEMILIANO DL. ALIGUI, M.D., M.P.H., Ph.D.
PCHRD Executive Director and Officer-in-Charge, Office of the Director
(September 6, 2004 - December 22, 2004)

MARIO V. CAPANZANA, Ph.D.
Chief Science Research Specialist
Nutrition Standards and Management Division and Officer-in-Charge, Office of the Director
(December 23 - 31, 2004)

DR. AIDA R. AGUINALDO, Ph.D.
Deputy Director
(January 29, 1997 - April 15, 2004)

MARIO V. CAPANZANA, Ph.D.
Chief Science Research Specialist
Nutrition Standards and Management Division

CELESTE C. TANCHOCO
Scientist III & Chief Science Research Specialist
Bio-Medical Nutrition Division

MA. REGINA A. PEDRO, Ph.D.
Chief Science Research Specialist
Nutrition Intervention Modelling & Assessment Division

LYDIA M. MARERO, Ph.D.
Chief Science Research Specialist
Communication Dissemination & Services Division

FERDINAND B. OAMAR, Ph.D.
Chief Administrative Officer
Administrative & Finance Division
Organizational Structure
(As per E.O. 128)
Directory of Officials

Dr. Corazon VC. Barba ............................................................................................ Director (1998-July 11, 2004)
Dr. Rogelio A. Panlasigui ......................................................................................... OIC, Office of the Director (July 12-September 5, 2004)
Dr. Gemiliano DL. Aligui ............................................................................................ OIC, Office of the Director (September 6-December 22, 2004)
Dr. Mario V. Capanzana ............................................................................................ OIC, Office of the Director (December 23-31, 2004)
Dr. Aida R. Aginaldo ................................................................................................... Deputy Director (1997-April 15, 2004)

Nutrition Intervention Modelling and Assessment Division

Dr. Ma. Regina A. Pedro ............................................................................................ Chief Science Research Specialist
Ms. Corazon M. Cerdena ......................................................................................... Supervising Science Research Specialist
Food Consumption and Anthropometry Section
Ms. Wilma L. Molano ............................................................................................ Supervising Science Research Specialist
Nutrition Economics and Statistics Section
Ms. Felicita F. Bacolod ............................................................................................ Supervising Science Research Specialist
Nutrition Intervention and Policy Section

Bio-Medical Nutrition Division

Ms. Celeste C. Tanchoco .......................................................................................... Scientist III and Chief Science Research Specialist
Ms. Gemma P. Yuchingtat ....................................................................................... Supervising Science Research Specialist
Clinical Nutrition Section
Ms. Ma. Isabel Z. Cabrera ......................................................................................... Supervising Science Research Specialist
Nutrition Biochemistry Section
Dr. Ma. Sofia V. Amurao ............................................................................................ Senior Science Research Specialist
Lifestyle Nutrition Section
Ms. Leah A. Perlas ................................................................................................... Senior Science Research Specialist
Biochemical Nutrition Assessment Unit
Ms. Revelita L. Cheong ............................................................................................ Senior Science Research Specialist
Nutrient Requirement Unit

Nutrition Standards and Management Division

Dr. Mario V. Capanzana ............................................................................................ Chief Science Research Specialist
Ms. Joyce R. Tobias ................................................................................................. Supervising Science Research Specialist
Technology Transfer and Commercialization Section
Ms. Teresita R. Portugal ............................................................................................ Supervising Science Research Specialist
Food Quality and Safety Section
Ms. Ma. Elena G. Fernandez .................................................................................... Supervising Science Research Specialist
Nutrition Information, Promotion and Training Section

Communication Dissemination and Services Division

Dr. Lydia M. Marero ................................................................................................. Scientist II and Chief Science Research Specialist
Ms. Carmelita C. Guillante ...................................................................................... Senior Science Research Specialist
Nutrition Communication and Education Research Section

Administrative and Finance Division

Dr. Ferdinand B. Oamar ............................................................................................ Administrative Officer V
Ms. Aquilina V. Dela Cruz ....................................................................................... Accountant III
Accounting Section
Ms. Jocelyn R. Badillo ............................................................................................. Human Resource Management Officer III
Human Resource Management Section
Ms. Naomi O. Solis .................................................................................................. Budget Officer III
Budget Section
Ms. Evelina R. Fradejas ........................................................................................... Cashier III
Cashier Section
Ms. Yolanda G. Perlas ............................................................................................. Supply Officer III
Property Section
Engr. Eugenio M. Ramirez ..................................................................................... Senior Science Research Specialist
Maintenance Section

Office of the Director

Dr. Trinidad P. Trinidad ........................................................................................... Scientist II
Dr. Imelda A. Agepepa ............................................................................................. Assistant Scientist
Ms. Teresa S. Mendoza ........................................................................................... Planning Officer IV
Planning and Evaluation Unit
Ms. Rebecca L. Garin .............................................................................................. Senior Science Research Specialist
Management Information System Unit
Ms. Mary Ann P. Ballesteros .................................................................................. Management Audit Analyst II
Management and Audit Unit
TECHNICAL WORKING GROUP:

Milflor S. Gonzales  
Senior Science Research Specialist  
FNRI-DOST

Catherine Rose P. Josue  
Science Research Specialist I  
FNRI-DOST

Victor Franco J. Alfonso, Jr.  
Science Research Specialist I  
FNRI-DOST

Charina A. Javier  
Science Research Specialist I  
FNRI-DOST

Alexis M. Ortiz  
Science Research Specialist I  
FNRI-DOST

Ma. Idelia G. Glorioso  
Science Research Specialist II  
FNRI-DOST

Marlon O. Balitaon  
Science Research Specialist I  
FNRI-DOST

Erlinda V. Ilao  
Science Research Analyst  
FNRI-DOST

Romeo R. Artuz  
Artist-Illustrator II  
FNRI-DOST

Redemptor C. Pagador  
Bookbinder I  
FNRI-DOST

ADVISERS:

Mario V. Capanzana, Ph.D.  
OIC, Office of the Director, FNRI-DOST

Celeste C. Tanchoco  
Scientist III & Chief Science Research Specialist, FNRI-DOST

Ma. Regina A. Pedro, Ph.D.  
Chief Science Research Specialist, FNRI-DOST

Zenaida V. Narciso, Ph.D.  
Supervising Science Research Specialist, FNRI-DOST

Teresita R. Portugal  
Supervising Science Research Specialist, FNRI-DOST

Ferdinand B. Oamar, Ph.D.  
Administrative Officer V, FNRI-DOST

Teresa S. Mendoza  
Planning Officer IV, FNRI-DOST