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ABBREVIATIONS

AAS	Atomic Absorption Spectrometer
ACT	Asian countries in transition
ADB	Asian Development Bank
AIC	American Ingredients Company
CAR	Central Asian Republics
CARK	Central Asian Republics and Kazakhstan
CDC	Center for Disease Control and Prevention
FF	Flour fortification
FSU	Former Soviet Union
HPLC	High Performance Liquid Chromatography
ID	Iron deficiency
IDA	Iron deficiency anemia
IDD	Iodine deficiency disorders
IDPAS	Iron Deficiency Project Advisory Service
INF	International Nutrition Foundation
JFPR	Japan Fund for Poverty Reduction
KAN	Kazakh Academy of Nutrition
MoH	Ministry of Health
MOST	The USAID Micronutrient Program
RCAO	Regional Coordination and Administration Office
RDI	Recommended Dietary Intake
SES	Sanitary and Epidemiological Station
SI	Salt Iodization
UNICEF	United Nations Children’s Fund
UNICEF CARK	Regional Office of United Nations Children’s Fund for CARK
UNU	United Nations University
USI	Universal Salt Iodization
WHO	World Health Organization
WFF	Wheat Flour Fortification

BACKGROUND

1. The ADB approved for grant assistance under the JFPR a regional project¹ for five countries ACT², 2005. On 23 November 2005, the Contract No. COCS/05-551 “Contract for consultant’s services between Asian Development Bank and Kazakh Academy of Nutrition, Kazakhstan” in the framework of JFPR 9052-REG Program “Sustainable Food Fortification” was signed. In accordance with the contract, the contract beginning date is 1 January 2006 and completion date is 31 May 2007.

The activities of KAN started much earlier, namely in January 2005, just after the completion of JFPR 9005 Project “Improving the nutrition of poor mothers and children in Asian countries in transition” on 31 December 2004. In accordance with the Contract COCS/05-551 a First Quarterly report was to be submitted by the end of March 2006.

2. The Project aims at reinforcing and sustaining the reduction of iodine deficiency disorders and iron deficiency anemia among poor children and women in Central Asia through giving special attention to supply (production and distribution), demand (public awareness and demand creation) and regulation (quality control, implementation of regulations/legislation and trade facilitation). The specific objectives are to: (i) obtain and sustain the use of iodized salt in 90% of households; (ii) sustain fortification of at least one third of the wheat/flour consumed domestically; (iii) build-up the capacity of the private and public sectors to produce quality fortified food; (iv) develop regulatory institutions or incentive schemes to facilitate fortification and ensure the trade of quality fortified food among Central Asian countries; and (iv) build awareness of consumers about prevention of iodine deficiency disorder and iron deficiency anemia, and the benefits of micronutrient enriched food.

The Project has four major components:

- (i) **Strengthening the capacity of salt industries.** This component aims at building-up the capacity of salt industries and flour mills to procure fortificants, equipment and other essential items required for food fortification; and to assure the quality of fortified food. The Project will help establish and strengthen producers’ associations, and train salt industries in procurement and food fortification technology. Technical assistance will help millers access the international premix market, including identifying the range of suppliers and procurement options.
- (ii) **Strengthening the capacity of the governments.** This component aims at developing and strengthening the implementation of food fortification legislation and regulations; improve governments’ quality assurance system including the border control of trade in salt; and help governments develop regulatory frameworks and agreements that will ease the trade of fortified food in the region. The Project will provide TA to the governments when developing legislation and regulations, training, and providing laboratory equipment to the sanitary epidemiological services (SES), which are responsible for food inspection.

¹ JFPR 9052 – Sustainable Food Fortification, 2005.

² Republic of Kazakhstan, Kyrgyz Republic, Mongolia, Republic of Tajikistan, and the Republic of Uzbekistan.

- (iii) **Social mobilization/poverty targeting.** This component aims at promoting public awareness and acceptance of micronutrient–enriched salt and wheat flour, and support innovative activities in communities to increase the access of the poor to fortified salt and wheat flour. The Project will support information, education and communication campaigns through different levels of media, and social mobilization and marketing by the civil society. The activities will include testing of the quality of iodized salt by producers and retailers. The component will also support innovative activities to address country- or region-specific activities to increase the access of the poor to fortified food. A few examples of such innovative activities are collective fortification of wheat flour milled by small mills, and linking of food fortification efforts with support for oral forms of micronutrient supplements and “in-home” fortification packets that can be used to fortify home-prepared complementary foods.
 - (iv) **Project management, monitoring and evaluation.** The component will support the regional project administration office, which will inspect daily project activities in the participating countries, and each country project office (CPO) to implement investment plans. The Project will also support technical and supervisory workshops at 6-month intervals, including the midterm review workshop, and annual auditing. The Project emphasizes rigorous evaluation through sentinel studies on the impact of fortified food, economic and financial analysis of food fortification, and other interventions for reducing IDD and IDA.
3. The Kazakh Academy of Nutrition (KAN), a partner agency in implementing the Project to address the micronutrient deficiencies in the participating countries, has performed all the activities that were planned for the reporting period (April 2006-June 2006) in accordance with the “The Terms of Reference”, Contract No. COCS/05-551 “Contract for consultant’s services between Asian Development Bank and Kazakh Academy of Nutrition, Kazakhstan”.

TECHNICAL/PROJECT COMPONENTS

- (i) TO DEVELOP COMMUNICATION, INFORMATION AND EDUCATION MATERIALS ON IODINE DEFICIENCY DISORDERS (IDD) AND IRON DEFICIENCY ANEMIA (IDA) PREVENTION FOR WORKERS OF PUBLIC HEALTH SERVICES AND PUBLIC EDUCATION SERVICES, FLOUR AND SALT PRODUCERS, AND CONSUMERS OF FORTIFIED FOOD**
1. Professor T.Sharmanov, KAN’s Team Leader:
- a) Participated in The Midterm Project Review Regional Workshop, (11-14 September 2006, Cholpon-Ata, Kyrgyz Republic) as a chair person.
 - b) Participated in The Annual Meeting on Realization of Joint Program of Kazakhstan’s Government and UNICEF, (29-30 January 2007, Astana, Republic of Kazakhstan) as a chair person.
 - c) Publications:
 - 1) Scientific bases of National policy on healthy nutrition in the Republic of Kazakhstan. //J. Health and Nutrition, Almaty, 2007, №4 (60), p. 9-11.
 - 2) Corrosion of common sense. Torments concerning the flour fortified by essential micronutrients. SOS! On our daily bread. //Newspaper «Central Asian Monitor» 12 January, №1 (108).
 - 3) Let us not to grow old. //Newspaper «Kazakhstanskaia pravda», 26 January 2007, №3 (110).
 - 4) The health of the population is a key factor of an economy. //J «Management of Quality», 2007, №3, 23006, p. 29-32.
 - 5) Torment or Flour. //Newspaper «Liter», 22 January 2007.
 - 6) “Flour fortification in Kazakhstan - solving the problem of iron deficiency anemia and other forms of “hidden hunger»». Newspapers: “Izvestia”, “Liter”, “1+1”, “OKO”, “Komsomol’skaia Pravda-Kazakhstan” a.oth. In Kazakh and Russian, 12 February 2007.
 - 7) Vitamin asked permission to a mill. //Newspaper Kazakhstanskaia pravda», 19 May 2007, №75 (25320).
 - d) Speeches on TV:
 - 1) TV Channel “Astana”: subject «On fortification of basic food products», direct transmission in Russian, 20 January 2007, duration 30 minutes.
 - 2) TV Channel “Astana”: Press-conference “Flour fortification in Kazakhstan - solving the problem of iron deficiency anemia and other forms of “hidden hunger», direct transmission in Russian, 12 February 2007, duration 30 minutes. Organizers: CPO of JFPR-9052, ADB Kazakhstan, and Kazakh Academy of Nutrition.

Participants: Parliament, Kazakhstan (Tutkushev B., Duisekeev A.), Ministry of Health of Kazakhstan (Belonog A.), Kazakh Academy of Nutrition (Sharmanov T.), League of Millers and Bakers of Kazakhstan (E.Gan), Zhelaev’s mill factory (Borsa A.), CPO of JFPR-9052, ADB Kazakhstan (Karsybekova N.), journalists of Mass Media.

- 3) TV Channels “Astana”, “Kazakhstan”, “Era TV”, “Kazinform” a.oth.: subject “Flour fortification in Kazakhstan - solving the problem of iron deficiency anemia and other forms of “hidden hunger»», direct transmission in Kazakh and Russian, 12 February 2007, duration 10 minutes.
- 4) TV Channel “Kazakhstan”: subject «Iodine deficiency», direct transmission in Russian, 24 March 2007, duration 30 minutes.

2. Professor Shamil Tazhibayev, KAN’s Regional Coordinator:

- a) Participated in The Midterm Project Review Regional Workshop, (11-14 September 2006, Cholpon-Ata, Kyrgyz Republic) as a facilitator.
- b) Participated in The Annual Meeting on Realization of Joint Program of Kazakhstan’s Government and UNICEF, (29-30 January 2007, Astana, Republic of Kazakhstan) as a facilitator and made a presentation named “Planning of further activities on prevention of anemia and vitamin A deficiency in Kazakhstan” (*see file Anemia&VADpreventionAstana-Tazhibayev-Jan07-Rus*).
- c) Publications:
 - 1) Tazhibayev Sh. Anaemia Prevention and Control Programme Review in Dashoguz velayat of Turkmenistan, 2005. // Ministry of Health of Turkmenistan, UNICEF, Kazakh Academy of Nutrition. Ashgabad, Turkmenistan, 2006, English and Russian versions, 28 p.
 - 2) Tazhibayev Sh., Suleimanova D. Anaemia Prevention and Control Programme Evaluation in Uzbekistan, 2005. // Ministry of Health of Uzbekistan, UNICEF, Kazakh Academy of Nutrition. Tashkent, Uzbekistan, 2006, English (47 p.) and Russian (52 p.) versions.
 - 3) Ablayev N., Tazhibayev Sh. «Vitamins in Action». Monograph. Almaty, 2006, 162 p.
 - 4) Newspaper «Zhas Alash»: subject “Anemia”, Almaty, 2006, March 16.
 - 5) Tsoi I., Kulmurzayeva L., Tazhibayev Sh., a. oth. The role of fortified wheat flour in the prevention of iron deficiency in women and children. Methodical recommendations, approved by the Ministry of Health. Astana, 2006, 108 p.
 - 6) Tazhibayev Sh., Salkhanova A., Tolysbayeva Zh., a.oth. Folic acid deficiency and its prevention. Methodical recommendations, approved by the Ministry of Health. Almaty, 2007, in Kazakh (47 p.) and Russian (49 p.).
 - 7) Tazhibayev Sh., Suleimanova D., Rakhimjanov S. Anaemia Prevention and Control Programme Impact Evaluation in Uzbekistan, 2005. //Consequences and Control of Micronutrient Deficiencies: Science, Policy, and Programs – Defining

the Issues, Micronutrient Forum, Program Abstracts. 16-18 April 2007, Istanbul, Turkey, T25, p. 75.

d) Speeches on Tv:

- 1) TV 31-Channel: subject «Nutrition on holidays», direct transmission in Russian, 4 January 2006, 09.45 PM, duration 15 minutes.
- 2) TV Channel «Rakhat»: subject «Nutrition and obesity», recorded in Russian - 5 January 2006, 03.00 PM, and transmitted - 5 January 2006, 08.30 PM, duration 15 minutes.
- 3) TV Channel «Khabar»: subject «Nutrition and health», recorded in Russian - 9 January 2006, 01.30 PM, and transmitted – 21 January 11.30 AM, duration 30 minutes.
- 4) TV Channel «Almaty»: subject «Nutrition and diabetes», recorded in Kazakh and Russian, 10 March 2006, transmitted – from 10 March, 09.00 PM till 13 March 12.00 AM every 0.5-1 hour, duration 5 minutes.
- 5) TV Channel «Rakhat»: subject «Rational nutrition», direct transmission in Russian, 15 August 2006, 8.15 AM, duration 12 minutes.
- 6) TV Channel «Rakhat»: subject «Rational nutrition of school children», direct transmission in Russian, 29 September 2006, 8.15 AM, duration 15 minutes.
- 7) TV Channel «Kazakhstan»: subject «Rational nutrition», direct transmission in Kazakh, 13 November 2006, 7.35 AM, duration 25 minutes.
- 8) TV 31-Channel: subject «Fish products», direct transmission in Russian, 15 November 2006, 9.00 AM, duration 30 minutes.
- 9) TV Channel «Kazakhstan»: subject «On the benefits and harms of tea», recorded in Kazakh - 7 December 2006, transmitted – 8 December, 7.00 and 9.00 AM, duration 10 minutes.
- 10) TV Channel «Khabar»: subject «Nutrition and age», recorded in Kazakh - 15 January 2007, transmitted – 20 January, 9.30 AM and 24 January, 9.00 AM, duration 10 minutes.
- 11) TV Channel «Almaty»: subject «Nutrition and diabetes», recorded in Kazakh and Russian, 16 January 2007, transmitted – 16 December, 09.00 PM and 17 December every 0.5-1 hour from 6.00 AM till 02.00 PM, duration 10 minutes.
- 12) TV Channel «Rakhat»: subject «Healthy nutrition», direct transmission in Russian, 24 April 2007, 8.45 AM, duration 15 minutes.
- 13) TV Channel «Kazakhstan»: subject «Milk products», direct transmission in Kazakh, 3 May 2007, 8.00 AM, duration 30 minutes.
- 14) TV Channel «Almaty»: subject «Child nutrition», recorded in Kazakh and Russian, 30 May 2007, and transmitted – 30-31 May, every 0.5 hour, 06.00 PM, duration 10 minutes.

3. Professor Shamil Tazhibayev, KAN’s Regional Coordinator, Salkhanova Akkumis & Tolysbayeva Zhanar, Communication consultants:

- a) The Methodical Recommendations “Folic acid deficiency and its prevention” is elaborated, approved by the Ministry of Health, printed in Russian (49 pages) and Kazakh (47 pages) languages, and distributed to medical institutions of oblast, city and rayon levels in the country for practical use. The Methodical Recommendations include a description of the role of FA for health, recommended dietary allowances for FA, main food sources of FA, consequences of FAD, methods of FA analysis, different methods of prevention of FAD, including flour fortification (*see files: FA-MethodalRecommendations07Rus.pdf; FA-MethodalRecommendations07Kaz.pdf*).
4. Professor Mussa Aijanov, IDA/WFF consultant
- a) Sent out to all country-participants the “Terms of reference for flour fortification consultants in Central Asia” (in Russian) through Mr. Rustam Muzafarov, Regional Coordinator of JFPR 9052-REG Program. 29 Aug 2005 (*See attached PDF file # 4 in Annex to Mussa Report*).
 - b) Dispatched to Dr. Jack Bagriansky examples of TV, print advertisements as well as other promotional materials including logos, packaging, and posters developed by KAN for producing a Miller's Fortification Toolkit - an interactive CD-rom which includes all the technical information miller's need to promote sustainable fortification. 25 Sep 2005.
5. Dr. Feruza Ospanova, Consultant on IDD/USI:
- a) Participated in the preparation of the recommendations of the National Conference on the results of the project “Rapid Assessment of the Household Use and Adequacy of Salt Iodization in the Republic of Kazakhstan” for high political level with support from UNICEF. Astana, 1 Sep 2005.
 - b) Rendering assistance for the preparation of a presentation by the Salt Producer Association of Kazakhstan.
 - c) Participated in the International Workshop “Strengthening the Laboratory Capacity and Iodine Status Assessments for Monitoring of Sustained IDD Elimination through USI in the CEE/CIS Region” (18 – 19 May 2006, Istanbul, Turkey). The establishment of the Regional Network for strengthening of monitoring systems in countries of the Region was discussed.
 - d) Participated in the National Conference “Monitoring and Evaluation of IDD/USI Programme” (19-23 June 2006, Astana, Kazakhstan). He also gave a presentation named “Monitoring the Adequacy of Salt Iodization and Consumption in Kazakhstan”. *See attached file: Ospanova-Unicef'sSeminar-Astana19-23June06.pdf*.
 - e) Participated in The Meeting of the Technical Group “Strengthening the Monitoring and Supervision of Salt Iodization Quality” (17 July 2006, Almaty, Kazakhstan) and in the Elaboration of Draft National Plan of Food Fortification Monitoring in Kazakhstan” (*see file: KazIDD-USI-MeetingRecommendations06Rus*).
 - f) Participated in The Midterm Project Review Regional Workshop, (11-14 September 2006, Cholpon-Ata, Kyrgyz Republic) as a facilitator.
 - g) Prepared the presentation for Roundtable Discussion on the Monitoring of Quality Control and Assurance of Iodized Salt, 2006.

- h) Discussion with science correspondent of The New York Times about IDD situation in Kazakhstan (NYT, 16 December, 2006).
 - i) Preparation of a manuscript on “The Status of Iodized Salt Quality Control in Central Asia” for Regional bulletin, 2006.
 - j) Visit to Suzak-Tuz with UNICEF Technical support, a Russian version of the trip report is prepared, 2007 (*see file: TripReportSuzaksol-Feruzza-Rus07.pdf*).
 - k) Participated in the International Regional Workshop “Training on Urinary Iodine Excretion Method”. 3-6 April 2007, Institute of Endocrinology, Tashkent, Uzbekistan and in the preparatory work for the establishment of the Regional Network for strengthening the monitoring systems in countries of the Region.
 - l) Participated in the elaboration and preparation of materials for the Draft application for Certification of the Republic of Kazakhstan as a country having achieved USI, 2007.
 - m) Speeches on TV:
 - 1) “Almaty” TV channel: On benefits of iodized salt consumption (15 May 2007).
 - 2) TV channel “Kazakhstan”: On IDD prevalence in Kazakhstan and benefits of iodized salt consumption (19 May 2007).
6. Dr. Salkhanova Akkumis & Dr. Tolysbayeva Zhanar, Communication consultants:
- a) Distributed among all participating countries a Brochure on folic acid deficiency developed by the Regional communication team (*see attached file: “Folic_acid_brochure”*).
 - b) Participated in the Workshop on Communication Strategy for Mass-media and NGO on prevention of Iron deficiency anaemia and Iodine deficiency disorders, which took place in Bishkek, Kyrgyz Republic, 27 January 2006 (*see attached file: “Bishkek_January_2006_Agenda_eng”*). The following activities were done during the Workshop:
 - 1) Preparation of scientific articles and presentations by KAN’s team on micronutrient deficiency for workshop organizers.
 - 2) The Experience of Communication Campaign Implementation for solving IDA and IDD problems in Central Asia was presented and questions were answered (*see attached file “Bishkek_January_2006_Pres*).
 - 3) Work in the technical groups as moderators.
 - 4) Development of strategy of communication campaign together with mass media and NGOs representatives.
 - c) Work with CPOs on developing Newsletters (recommendations, edition).
 - d) Work with CPOs on developing the second volume of country Newsletter (recommendations, edition).
 - e) Elaboration of the regional Newsletter.
 - f) Discussion with CPOs of the participating countries on the final version of the second volume of country Newsletters (recommendations, edition).

- g) Dissemination of the Russian version of the regional Newsletter, January 2007 among Project participants.
- h) Dissemination of methodical recommendations on “Folic acid deficiency and its prevention” among medical institutions of republican, oblast, city and rayon levels for practical use (*Almaty 2007, in Kazakh and Russian languages, see attached file: folic_acid.pdf*).
- i) Publications in the mass media on IDD among children and SI (*see attached file: IDD among children.pdf*), and on the role of the communication component in the prevention of micronutrient deficiency (*see attached files: commun_role.pdf; BAD.pdf*).

(ii) TO MAINTAIN PROJECT’S WEBSITE AND COLLECT INFORMATION FOR COUNTRY PROJECT OFFICES (CPOs)

7. All the KAN’s consultants had meetings with Joseph Hunt, ADB (August-September 2005) and assisted him in the preparation of materials on IDD/USI and IDA/WFF for ADB monograph (August-September 2005).

- a) Presentation of IDD/USI database, preparation of the salt situation analysis.
- b) Presentation of regional communication work and communication database.
- c) Preparation of the top-list of IEC materials from Project countries-participants (*see attached file “IEC materials_ADB_monograph”*).
- d) Materials on prevalence of IDA and IDD among target population in six countries involved in JFPR 9005 Project.
- e) Production and coverage monitoring data, and the results of quality control for fortified flour and iodized salt in six countries.
- f) The results of Sentinel Study in six countries.

8. Salkhanova Akkumis & Tolysbayeva Zhanar, Communication consultants:

- a) Participation in the Regional information meeting for County Project Coordinators on issues of country communication/social mobilization plans (25-26 August, 2005, Bishkek): Presentation of the Project web-site; Elaboration and dissemination of the questionnaires on web-site work for CPOs (*see attached file “Bishkek_08_2005_website_quest”*); Participation in the discussion of the presented communication strategies of CPOs; Drawing up the minutes of meeting.
- b) Updating structure of 'mirror' and bilingual resource Web-link at Caffproject Network and discussion with RCAO.
- c) Correspondence with Country Project Offices for requests of new information for updating countries web-pages.
- d) Editing materials and information updating of Kyrgyzstan, Kazakhstan, Mongolia and Uzbekistan country web-pages.

- e) Collecting and editing materials from each involved country for country-page in accordance to the structure of Web-site (Tajikistan, Mongolia, Kazakhstan, Kyrgyz Republic and Uzbekistan).
- f) Placing available materials on the Web-site (constantly).
- g) Placing Russian version of the regional Newsletter, January 2007.

(iii) TO PROVIDE UPDATED INFORMATION ON NUTRITION AND FOOD FORTIFICATION TO CPO's

9. All KAN's consultants Participated in and facilitated the Evaluation Seminar for Sustainable Food Fortification (30-31 March 2006, Astana, Kazakhstan), and:

- a) Prof. T.Sharmanov made the welcome speech.
- b) Prof. Shamil Tazhibayev gave a presentation named “Review on the prevalence of iron deficiency anemia in Kazakhstan. The results of sentinel study” (*see attached files: TazhibayevIDA-AstanaMarch06-Rus.pdf; TazhibayevIDA-AstanaMarch06-Eng.pdf*); and he was the chairperson in a plenary session.
- c) Prof. Musa Aijanov and Prof. Y.Sinyavski gave a presentation named “Legislation on wheat flour fortification, standards”; M.Aijanov was the chairperson in a plenary session.
- d) Dr. Feruza Ospanova gave a presentation named “Iodine deficiency disorders/universal salt iodization: review and assessment of achievements”.

10. Prof. Sh.Tazhibayev:

- a) Participated and facilitated the Round-table “IDA, Thalassemia, and Flour Fortification” in Baku, Azerbaijan, 4-7 July 2005 and gave a presentation entitled “IDA prevalence in the Region” (*see attached PDF files IDARegionBaku05Eng.pdf; IDARegionBaku05Rus.pdf*); Participated in the elaboration of the Recommendations for National Policy on IDA prevention; and jointly with Peter Ranum, ADB IDA/WFF consultant, assisted the country coordinator in the preparation a Plan of activities for sustainable flour fortification in Azerbaijan.
- b) Participated in and facilitated the Annual Kazakhstan Government and UNICEF Meeting on Program implementation, and gave a presentation entitled “IDA anaemia in the Region” (*see attached PDF file IDARegionAstana05Rus*).
- c) In the framework of the project “Multi Indicator Cluster Survey (MICS)” in Kazakhstan:
 - 1) The data on urine iodine excretion and anemia prevalence among women in reproductive age (n=4278), and the coverage of households by fortified flour and iodized salt in Kazakhstan was processed and analyzed, and the tables and figures are prepared (the final report will be prepared in the first quarter of 2007).
 - 2) The prevalence of anemia among women in reproductive age (n=4278) in Kazakhstan was assessed using the HaemoCue method (the results are being processed now).

- 3) The coverage of households by fortified flour was assessed using qualitative spot test for iron (the results are being processed now).
 - d) Prepared a report on the status of iron deficiency anemia in the Kyrgyz Republic (*see the file IronDeficiencyKyrJan07.pdf*).
 - e) Prepared a draft of the final report on the results of micronutrients study in the framework of the project “Multi Indicator Cluster Survey (MICS)” in Kazakhstan.
11. Professor Mussa Aijanov, IDA/WFF consultant:
- a) Participated in the Bishkek Conference, 11-12 March 2005 “Production and Quality Control of Fortified Flour”. He gave a presentation and assisted in training millers with the purpose to contribute with the CPO in the implementation of the new Pakistani feeders and dose-spreader in small mills (*see attached photos # 1-3 in Annex to Mussa Report*).
 - b) Participated in specifying each point of the draft of the new Law “Safety of foods” (instead of the Law “Quality and Safety of Foods”, currently in force) related to the implementation of mandatory flour fortification in Kazakhstan and took part in the meeting of the anemia task force at the government in Astana, 12 April 2005 (*see attached photos # 4-5 in Annex to Mussa Report*).
 - c) Took part in the Round-table “IDA, Thalassemia, and Flour Fortification” in Baku, Azerbaijan, 4-7 July 2005 and made three reports: (1) “Flour fortification: Safety and Reduction Risk”, (2) “Thalassemia and flour fortification”, (3) “Wheat Flour Fortification: Legislation and Regulation” (*see attached PDF files # 1-3 in Annex to Mussa Report*); and jointly with Peter Ranum, ADB IDA/WFF consultant, assisted the country coordinator to prepare the plan of activities for sustainable flour fortification in Azerbaijan.
 - d) Participated in 17th IOAM Middle East and North Africa District Conference in Marrakesh, Morocco from 25 to 29 Sep 2005, made the report named “Eradication of IDA through Food Fortification” (*see attached PDF file # 5 in Annex to Mussa Report*), and took part in the Flour Fortification Leaders Group Regional Meeting for Central Asia, Azerbaijan, and Middle East-Africa. He was the chairperson in the session “Flour fortification in Central Asia” and decided to be in favour of the creation of the Central Asia Region mill association of IOAM.
 - e) Took part in the Conference (Astana, 1 Sep 2005) “Elimination of iodine deficiency disorders and anaemia prevention by food fortification” and said that, jointly with Peter Ranum, ADB IDA/WFF consultant, two new premixes (KAP Komplex # 2 and KAP Komplex # 3) were developed in April 2005 for flour fortification in the Central Asia. According to descriptions and applications of these premixes: “KAP Komplex # 2” contains ferrous sulfate as an iron source and provides additional micronutrients based on known patterns of needs and also adds vitamin B₁₂, which can be used to fortify premium grade and first grade wheat flour used in bakeries and pasta products or where the flour will be stored for less than two months, and “KAP Komplex 3” was developed with FeNaEDTA iron for use in high extraction flours, such as second grade flour or any flour with ash content higher than 0.8%, which results in high levels of phytates that inhibit the absorption of ferric sulphate, and Fe elemental.

- f) Developed the Strategy, Program, and Plan of Action to Anemia Control in Azerbaijan for 2006 to 2010 through technical support provided by the UNICEF office in Baku in October 2005 (*see attached PDF file # 6 in Annex to Mussa Report*).
 - g) Participated in the spade-works of enhancement of the public assistance for the needy as powerful tools to reduce the poverty in Kazakhstan. He, jointly with academician T.Sharmanov, developed a new Minimal Food Basket as a main component of the Subsistence Minimum. This document deals with the subject of consumption of fortified food as approved by the Government of the Republic of Kazakhstan in December 2005 after detailed discussions on meetings with public organizations, parliament (Majlis, Senate), government (the Ministry of Labour and Social Protection, the Ministry of Health, the Ministry of Education and Science, the Ministry of Economic and Budget Planning, Agency of Statistics), and international agencies such as UNICEF, UNIFEM, ILO.
12. Salkhanova Akkumis & Tolysbayeva Zhanar, Communication consultants:
- a) Distributed to all participating countries the following different educational materials, translated and adapted by the Regional communication team for public health workers and population groups:
 - 1) Materials on IDA and zinc deficiency (in English).
 - 2) Information on zinc deficiency (in English) (*see attached file “ZincDeficiency05*).
 - 3) Niacin deficiency (in Russian) (*see attached file “Niacin_deficiency”*).
 - 4) Food Fortification is an effective public health intervention (in Russian) (*see attached file “Foodfort_ru05”*).
 - 5) Iron_Report_2005_1 (in English).
 - 6) The role of micronutrients in the immune response to infectious diseases (in Russian) (*see attached file “MNinImmuneResponse.ru”*).
 - 7) Had meeting with Mr. Khabsatar Omar, State Province Governor (Bayan-Ulgii province, Mongolia) and delivered IEM in Kazakh language to the population of the Bayan-Ulgii province (as most of the population in this province is Kazakh), February 2006.
 - 8) Participated in Regional Meeting of Flour Millers and Bakers of Central Asia and Mongolia (7-9 February, 2006, Almaty, Kazakhstan) and organized and conducted an exhibition of the communication materials on flour fortification and IDA prevention from the Project country-participants.
13. Dr. F.Ospanova, IDD/USI consultant:
- a) Participated in the Second Meeting of Salt Producers of Central Asia (22-24 November 2005, Tashkent, Uzbekistan). Prepared the presentation “Quality Assurance and Control on Iodization of Salt in Central Asia”, and participated in the preparation the recommendation.
 - b) Assisted in the Elaboration of Draft Tables for collection of database for MTR Regional Seminar (2006) on the issues of: Quality Control of Salt Iodization; Methods of Quality Control.

14. Dr. F.Ospanova and Zh.Tolysbayeva:

- a) Prepared comments for the draft revised review of Country’s CIP Proposals.
- b) In the framework of the project “Multi Indicator Cluster Survey (MICS)” in Kazakhstan:
 - 1) Analyzed 4521 urine samples in order to assess the IDD prevalence in Kazakhstan by measuring the iodine excretion using the spectrophotometer method (the results are being processed now).
 - 2) Analyzed 1000 salt samples in household level in order to quantitatively assess the levels of iodine in iodized salt using the titration method (the results are being processed now).

(iv) TO ADVISE THE PROJECT COUNTRIES ON NUTRITION RESEARCH DESIGN, FOOD FORTIFICATION AND ANY OTHER RELEVANT ISSUES

15. All KAN’s consultants (T.Sharmanov, Sh.Tazhibayev, F.Ospanova, M.Aijanov, A.Salkhanova and Zh. Tolysbayeva) participated in a Press-conference on presentation of Kazakh Salt Producers Association, September 2005.

16. All KAN’s consultants participated in the organization and conduction of the Conference-Round-table “Activity of Kazakh Academy of Nutrition as an international collaborating center of WHO in the development and realization of the healthy food national policy in the Central Asian region” (6 February 2006, Almaty, Kazakhstan). The following presentations were made by KAN’s consultants:

- a) T.Sharmanov: Basic priority of activity of the Kazakh Academy of Nutrition (*see attached file: SharmanovBasic priority of activity of KAN-06Eng.pdf*).
- b) Sh.Tazhibayev: The role of the Kazakh Academy of Nutrition in the development and realization of the nutrition policy ideology in the countries of Central Asia region (*see attached file: TazhibayevNutritionPolicyJan06Eng.pdf*).
- c) M.Aijanov: New food basket and perfection of subsistence minimum in Kazakhstan (*see attached file: AijanovMFB-06Eng.pdf*).
- d) Y.Sinyavski: The state program "Development of space activity in the Republic of Kazakhstan for 2005-2007" (*see attached file: SinyavskiSpaceProgramKaz06Eng.pdf*).

17. All KAN’s consultants participated in and facilitated the Conference “Elimination of iodine deficiency disorders and anaemia prevention through food fortification”, Astana, 1 September 2005. (The Participants – representatives of international organizations, salt and flour producers, representatives of ministries and departments, and Mr. Anatoliy Karpov (former Chess world champion). KAN’s consultants made the following activities and presentations:

- a) Prof. T.Sharmanov: welcome speech, and a presentation titled “Prevention of iodine deficiency disorders and anemia in Kazakhstan and Central Asian Republics: achievements, problems and perspectives”.
- b) Prof. Sh.Tazhibayev: “The evaluation results of the efficiency of food fortification program implementation in preventing micronutrients deficiency” (*see attached file: TazhibayvIDARegionAstana05Rus.pdf*).

- c) Prof. Y.Sinyavski: «Normative and legal issues of food fortification» (*see attached file: SinyavskyFF-NormativeIssues05Rus.pdf*).
- d) Prof. M.Aijanov: «New premixes for flour fortification».
- e) Dr. A.Salkhanova: "Web site for food fortification".

18. KAN's consultants participated in and facilitated the Regional Meeting of Flour Millers and Bakers of Central Asia and Mongolia "Sustainable quality wheat flour fortification in Central Asia", Almaty, February 7-9 2006, having 128 participants (representatives of international organizations, flour-milling enterprises of the participating countries of JFPR 9052 project, suppliers of equipment and fortificants, representatives of different ministries and departments). The following matters were discussed: fortification of wheat flour in Central Asia, progress in project implementation, composition of premix, needs and development, quality control and quality assurance of fortified wheat flour in Central Asia, regional cooperation and trade of wheat grain and flour in Central Asia. KAN's consultants facilitated the meeting and made the following activities and presentations:

- a) Prof. T.Sharmanov: welcome speech and chairperson in plenary session.
- b) Prof. Sh.Tazhibayev: made a presentation named "Overview of The Iron Deficiency Anemia Status in Central Asian Countries and the Effectiveness of the Flour Fortification Programs in Pilot Areas" (*see attached files: TazhibayvAnemiaAsiaFeb06'Eng.pdf; TazhibayvAnemiaAsiaFeb06'Rus.pdf*).
- c) P. Ranum and Prof. M. Aijanov: made a Keynote Presentation on Premix Formulation for Central Asia.
- d) Prof. Y.Sinyavski: made a Keynote Presentation on Regulations and Standards on KAP Premix.

19. The Law "On safety and quality of food products" of the Republic of Kazakhstan, which was adopted in 2004, includes special clauses on mandatory fortification of wheat flour of first and supreme grades produced in Kazakhstan. A special Decree of the Government of Kazakhstan for implementation of the Law was issued in 2005. But there are some people against the mandatory flour fortification in Kazakhstan (some representatives of the Ministry of Industry and Trade, and Ministry of Agriculture), and they have been undertaking activities in order to shift from mandatory flour fortification to voluntary one. In particular, they started the elaboration of a draft of a new Law "On safety of food products" of the Republic of Kazakhstan in 2005. The KAN's consultants (T.Sharmanov, Sh.Tazhibayev and M.Aijanov) participated in Working Group sessions for preparation of the draft of the new law, and they substantiate the necessity of mandatory flour fortification. They also participated in parliament sessions on consideration of the law. Professor T.Sharmanov participated in all high level meetings for consideration of this issue. The clauses of the law on mandatory flour fortification were adopted by both Mazhilis and Senate in 2007, but the President of Kazakhstan vetoed these clauses. It has been decided that a draft of new law "On food fortification" is to be prepared during July-September 2007.

20. Professor T.Sharmanov, KAN's Team Leader:

- a) Participated in high-level Meeting with parliament delegates and representatives of ministries, and salt and flour producers, ADB, UNICEF and other organizations, in

Borovoe, Kazakhstan, 2-3 September 2005. The issues of legislation on food fortification were discussed. He made the welcome speech, and the presentation “Main results of the first stage of ADB Project and a Collaboration program between Kazakhstan’s Government and UNICEF on prevention of iodine deficiency disorders and iron deficiency anemia” (25 min.).

- b) Participated in The Seminar “International conference-roundtable on collaboration between Korea food research institute and Kazakh Academy of Nutrition”. Almaty, Kazakhstan, 29 May - 2 June 2006. He also made the presentation “Basic priority of activity of the Kazakh Academy of Nutrition”. *See attached file: SharmanovKAN'sBasicPrioritiesMay06-Eng.pdf*
- c) Participated in The Seminar “On food fortification”. Astana, Kazakhstan, 9 June 2006. He also made a presentation named “On necessity of mandatory wheat flour fortification in Kazakhstan”, where high-level decision makers took part. *See attached files: SharmanovNesessityMandatoryFFAstanaJune06Rus.pdf ; SharmanovNesessityMandatoryFFAstanaTextJune06Rus.pdf*
- d) Participated in the Seminar “Fortification of food products by folic acid and prevention of neural tube defects”, Kiev, Ukraine, 27-29 November 2006. Made a presentation called “Folate: an experience of food fortification program implementation in Asian countries (*see a file in appendixes: SharmanovKievFolic&FF-Nov06.pdf*)
- e) Participated in the Technical Group of the Parliament of Kazakhstan for preliminary consideration of the draft Law “The safety of food products”, Astana, Kazakhstan, December 2006. He also made a presentation named “On necessity of maintenance the clauses on mandatory flour fortification in a new Law on safety of food products” (*see a file in appendixes:SharmanovFF-AstanaDec06.pdf*)
- f) Published the article “On necessity of mandatory flour fortification in Kazakhstan” in a newspaper in Kazakhstan (*see a file FF-SharmanovJan07-Rus.pdf*).
- g) Made presentations in the Parliament “On necessity of mandatory flour fortification in Kazakhstan”, January-February 2007. These activities were undertaken for maintaining the clauses on mandatory wheat flour fortification in the draft of the new Law “On food safety”, which is under consideration by the Parliament of Kazakhstan.

21. Professor T.Sharmanov, KAN’s Team Leader, Professor Shamil Tazhibayev, KAN’s Regional Coordinator, and Dr. Feruza Ospanova, Consultant on IDD/USI:

- a) Participated in the Second and Third Meetings of the Technical Group “The Strengthening of Monitoring and Supervision of Iodization Salt Quality”, Almaty, Kazakhstan, 17 October and 3 December 2006.

22. Prof. Sh.Tazhibayev, KAN’s Coordinator:

- a) Participated in and facilitated the nutrition workshop for Development of an Action Plan for Improving the Nutritional Status of Children and Women in Tajikistan”, Dushanbe, Tajikistan, 18-19 April 2005. He was a facilitator and took part both in the workshop and preparation of the Action Plan (*see attached file:PlanNutrTajApril05Eng.pdf*).

- b) Participated in and facilitated the IX CARK Forum on Mother and Child Health, Dushanbe, 22-24 September; he made the presentation “Reaching universal salt iodization” (see attached files: *TazhibayevIDD-MCHForumDushanbe05Eng.pdf*; *TazhibayevIDD-MCHForumDushanbe05Rus.pdf*).
- c) As the main researcher, conducted the survey “Anaemia Prevention and Control Programme Review in Dashoguz velayat of Turkmenistan”, 2005, jointly with the Ministry of Health of Turkmenistan and UNICEF, 2005, and prepared an English (see files: *APCEval-nDashogusTurFinalReportEng05.pdf*; *FiguresTurAPCPR-05-1.pdf*; *TablesFinalReportTur05Eng1.pdf*) and Russian (see files: *APCEval-nDashogusTurFinalReportRus05.pdf*; *TablesFinalReportTur05Rus1.pdf*; *FiguresTurAPCPRRus-05-1.pdf*) versions of the report.
- d) As the main researcher, conducted the survey “Anaemia Prevention and Control Programme Evaluation in Uzbekistan”, 2005. The Ministry of Health of Uzbekistan, UNICEF, Kazakh Academy of Nutrition, 2005, jointly with the Ministry of Health Uzbekistan and UNICEF and prepared an English (*ReportLastUzb06Eng.pdf*; *TablesLastUzb06Eng.pdf*; *FiguresLastUzb06Eng.pdf*) and Russian (*ReportLastUzb06Rus1.pdf*; *TablesLastUzb06Rus.pdf*; *FiguresLastUzb06Rus.pdf*) versions of the report.
- e) Participated in and facilitated The Seminar “Improving the Effectiveness and Coordination of the Nutrition Programs in the Country” held in Tashkent, Uzbekistan, 22-23 May 2006. He also made a presentation “Evaluation of the anemia prevention program impact in Uzbekistan”. See attached files: *Tazhibayev-APCP-Eval-nUzb06Eng.pdf*; *Tazhibayev-APCP-Eval-nUzb06Rus.pdf*
- f) Participated in and facilitated the Seminar “International conference-roundtable on collaboration between Korea food research institute and Kazakh Academy of Nutrition”. Almaty, Kazakhstan, 29 May - 2 June 2006. He made the presentation “The role of the Kazakh academy of nutrition in the development and realization of nutrition policy ideology in the countries of Central Asia region”. See attached file: *TazhibayevNutritionPolicyMay06Eng.pdf*
- g) Participated as a trainer and facilitated the training seminar “Impact monitoring of salt iodization and flour fortification programs” held in Ashgabat, Turkmenistan, 7-8 June 2006. See attached files: *TazhibayevEval-nFortifiedFoodConsumptionAshgabatJune06Rus.pdf* ; *TazhibayevImpactMonitoringFortifiedFoodAshgabatJune06Rus.pdf*
- h) Prepared Comments to CIP-Proposal and Country investment work-plan for countries:
 - 1) Kazakhstan. See attached file: *Comments'KazCIP-Sep06.pdf*
 - 2) Mongolia. See attached file: *Comments'MonCIP-Sep06.pdf*
 - 3) Tajikistan. See attached file: *Comments'TajCIP-Sep06.pdf*
 - 4) Uzbekistan. See attached file: *Comments'UzbCIP-Sep06.pdf*
- i) Prepared a short report named “On the necessity of mandatory fortification of first and premium grades flour produced in Kazakhstan” (see a file in appendixes: *TazhibayevFFKazDec06.pdf*).
- j) Prepared reference information for Parliamentarians on the necessity of mandatory flour fortification in Kazakhstan, and made a presentation in the Parliament, 1 February 2007 (see a file: *InfoOnFF-ForParliamentKazJan07-Rus.pdf*). These activities were undertaken for maintaining the clauses on mandatory wheat flour

- fortification in the draft of the new Law “On food safety”, which is under consideration by the Parliament of Kazakhstan.
23. Dr. F.Ospanova:
- a) Participated in conducting an action for pupils of a boarding school (Almaty, Kazakhstan) on the prevention of micronutrient deficiency through consumption of fortified food. The action was conducted together with the Healthy Life Style Center with the participation of representatives of schools in Almaty city, March 2006.
 - b) Participated in writing the Draft project “Rapid Assessment of the Household Use and Adequacy of Iodized Salt in the Republic of Kazakhstan”, She’s also conducting, and preparing a scientific report (in Russian), 2006.
 - c) Participated in the conduction of action for pupils of a boarding school in Almaty, Kazakhstan, 2006) on the prevention of micronutrient deficiency through consumption of fortified food. The action was conducted together with the Healthy Life Style Center with the participation of representatives of schools of Almaty city.
 - d) Rendered assistance to the Mongolian Country Team on the preparation of a revised version of CIP, 2006.
 - e) Prepared the presentation “Monitoring the adequacy and consumption of iodized salt in Kazakhstan” for the Republican Conference “Monitoring and Food Fortification Assessment. Evaluation of IDD Program”, 30-31 October 2006, Almaty, Kazakhstan. (see file in the appendixes: *OspanovaSI-KazNov2006Rus.pdf*).
 - f) Monitored field work in “Suzaksalt”, Kzylorda Oblast, Kazakhstan, 11-16 December 2006. (see Trip Report, file in the appendixes: *TripRepToSuzakOspanovaDec06.pdf*).
 - g) Met a representative of Iodine Lab of Tajikistan, Elvira Tyncherova and discussed iodine laboratory issues, 2006.
 - h) Did the attestation of KAN’s Iodine laboratory as certified by IRLI regional reference laboratory: Certificate received, 2006 (see file *IRLI-ReferenceIDD LabCertificate.pdf*).
24. Salkhanova Akkumis & Tolysbayeva Zhanar, Communication consultants:
- a) Rendered consultative assistance to Zarema Saidabdullaeva, Uzbekistan’s communication consultant:
 - 1) Via e-mail on realization of social mobilization campaigns and made comments and recommendations to the final report on communication work in Uzbekistan (December 2005 - September 2006).
 - 2) By reviewing the country’s communication strategy/plan and making comments and recommendations on the realization of the country communication plan (February 2006).
 - b) Participated in and facilitated the Workshop on Communication Strategy for Mass-media and NGO on prevention of Iron deficiency anaemia and Iodine deficiency disorders (27 January, 2006, Bishkek, Kyrgyz Republic) (see attached file : “*Bishkek_January_2006_Agenda_eng*”):

- 1) Preparation of scientific articles and presentations by the KAN team on micronutrient deficiency for workshop’s organizers.
 - 2) Presenting the Experience of Communication Campaign Implementation for solving IDA and IDD problems in Central Asia and answering questions (*see attached file “Bishkek_January_2006_Pres”*).
 - 3) Working in the technical groups as moderators.
 - 4) Developing a strategy of communication campaign together with the mass media and NGOs representatives.
- c) Elaboration of a unified design for each country newsletter, discussion with countries and their modification, and rendering assistance (*see files “Uz_NewsletTitle page_en”; “Tj_NewsletTitlepage_en”; “Mn_NewsletTitle page_en”; “Kg_NewsletTitle page_en”; “Kz_NewsletTitlepage_en”*).
 - d) Rendering assistance to Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan and Uzbekistan’s CPO and appropriate communication consultants in creating the Newsletter:
 - 1) Editing the Newsletter text
 - 2) Making comments and recommendations.
 - e) Making comments on Kazakhstan, Kyrgyzstan, Tajikistan communication consultants’ reports (*see files “Tj_ComConsultReportComments_09_06”; “Kz_ComConsultReportComments_09_06”; “Kg_ComConsultReportComments_09_06”*)
 - f) Rendering assistance to Uzbekistan’s CPO (Tolysbayeva Zhanar, April, 5, 2007), June 2006: (1) Discussion of the Communication plan; (2) Making comments and recommendations on the realization of the Communication plan taking into account the experience in the last Project and other participating countries; Discussion about Uzbekistan’s web-pages.
25. Professor M.Aijanov, WFF/IDA consultant:
- a) As the author of Section VI “Health and Nutrition” of the Statistical Monitoring Monograph “Living Standards and Poverty in the Kazakhstan” published by 6 UN A Time for the Renewal, UNIFEM, UNDP and SA of the RK. He also wrote the report “New Food Basket and Perfection of Subsistence Minimum in Kazakhstan” at the Presentation Meeting of the Monograph to the Government of the RK held in Astana, 29 October 2005 (*See attached PDF file # 7 in Annex to Mussa Report*).
 - b) Participated in and facilitated the Seminar “On food fortification”. Almaty, Kazakhstan, 19 June 2006. He also gave a presentation “On wheat flour fortification”. *See attached file: AijanovPresent-nFWF-19 June2006-Rus.pdf*.
 - c) The recommendations on elaboration of Methodical Recommendations for Quality Control of Fortified Flour were given, 2006.
 - d) Gave clarification on request to the Minister of Health of Uzbekistan regarding the safe use of the premix #KAP Komplex #1” for flour fortification in Uzbekistan, 2006 (*See attached PDF file # 8 in Annex to Mussa Report*).

- e) Participated in The First Conference and Exhibition of the Eurasian's Department of IAOM, 10-12 November 2006, Istanbul, Turkey:
 - 1) Made a presentation named «The experience of fortified flour production in Central Asia».
 - 2) Participated in the joint Meeting of IAOM, FFI and UNICEF: "On consideration of organizational issues for further expansion of flour fortification in the Eurasian Region".
- f) Participated in and facilitated the work of the Round Table «Special attention to nutrition on schoolchildren», Almaty, National Center of Healthy Life Style, 21 November 2006. He also made the presentation "Organization of schoolchildren's nutrition", where the issues on centralized supply of school dining-halls with fortified flour were discussed.
- g) Participated in and facilitated the work of Round Table «Implementation of dietary nutrition in the schools in Almaty City», Almaty, 29 November 2006. He also made a presentation called "Organization of the schoolchildren's nutrition and centralized supply of school dining-halls with fortified flour".
- h) Rendered consultative assistance to the director and engineer of a moderate size mill in Lenger, a town in the South-Kazakhstan oblast on the implementation of wheat flour fortification with vitamin-mineral premix «KAP Komplex № 1». The following aspects of flour fortification were discussed: (1) medical and social expediency of flour fortification, (2) economical advantage of flour fortification, (3) selection of feeders and technical «costs» of flour fortification, (4) the composition of the premix and the safety of the chosen dosage of fortificants, (5) the methods of saving and stock-taking of premix, (6) the points of sample splitting for semi-quantitative iron analysis in fortified flour, and the frequency of conducting spot-test for iron, (7) the safety of working with a certain premix, (8) average sample splitting of flour for measurement of fortificants in integrated products, (9) getting a certificate for fortified flour. One sample of Methodical recommendations on internal and external monitoring of the quality of fortified flour, which was elaborated by KAN, was given to millers (first quarter 2007).
- i) According to the request of the Head of the agriculture department in Tarbagatai rayon in the East-Kazakhstan oblast, detailed information on the implementation of flour fortification with indication of the costs for feeders and batchers, and premix «KAP Komplex № 1» was sent. Calculation was made on the economical advisability of flour fortification in mills with a production capacity of 50 MT per day. Methodical recommendations on internal and external monitoring of the quality of fortified flour, elaborated by KAN, were sent to millers (first quarter 2007).
- j) Participated in a workshop with school directors and owners of dining rooms on the issues of nutrition policy of schoolchildren/students in schools, lyceums and gymnasiums, akimat of Medeu rayon, Almaty, 16 March 2007. A presentation was made on the organization of free feeding of children in elementary classes, and centralized procurement of fortified flour for the rayon (or in the City) school's dining rooms.

26. Prof. M. Aijanov and Y. Sinyavski. WFF/IDA consultants:
- a) The recommendations on the selection of raw materials of vitamins and microelements needed for industrial production of premix «KAP Komplex 1» were given to the technologists from Stepnogorsk factory "Biomedpreparat", 2006-2007.
 - b) Assisted "Biomedpreparat" in organizational issues concerning supply of raw materials for the production of the first lot of vitamin-mineral premix in Stepnogorsk, Kazakhstan, 2006-2007.
 - c) A draft of the organization standard "A preliminary mix for wheat flour fortification" is prepared jointly with Alliance of millers and bakers in Kazakhstan, 2006.
 - d) A draft of The State Standard "Fortified wheat flour" is coordinated with The Ministry of Health and The Committee on Technical Regulation and Metrology of the Republic of Kazakhstan, 2006.
 - e) Participated in the preparation of the methodical hand-book on quality control of fortified flour (under supervision of academician T.Sharmanov), 2006.
27. Professor Yuri Sinyavski, WFF/IDA consultant:
- a) Participated in and facilitated the Seminar for technologies of flour fortification, 6-8 July 2005, Astana, –having 11 participants, on discussion about the actual problem of quality control of fortified flour and bakery products, and the perspective plan on flour fortification in the Republic in the light of the Law of the RK "Quality and safety of food products", as well as the prospects of production of the premix of the bases of NPO "Progress", in Stepnogorsk.
 - b) Participated in and facilitated the Seminar for laboratory assistants of flour-milling and baking enterprises, Astana, 4 August 2005, having 63 participants (representatives of different departments, flour-milling and baking enterprises). The current problems of flour fortification in the Republic of Kazakhstan, and some aspects of quality control system for grain and flour were discussed.
 - c) Participated in and facilitated the National Seminar "Partnership millers/bakers, NGO) and mass media in elimination of iron deficiency anemia, Shymkent, Kazakhstan, 18 October 2005. The number of participants was 78 persons (representatives of the government, ministries, international organizations, flour-milling enterprises, NGOs and mass media). The Discussed questions were: the prospects of fortified flour production in the Republic in the light of the Law of the RK "Quality and safety of food products" and Resolutions of the Government of the RK # 708, July 07 2005 "About approving the Rules on mandatory fortification (the enrichment) of wheat flour of first and supreme grades produced on the territory of the Republic of Kazakhstan". The problems of trade of flour with Uzbekistan were discussed as well.
 - d) Participated in and facilitated the Seminar "Sustainable food fortification", 16-17 May 2006, Kostanai, Kazakhstan, –with 65 participants (representatives of mills and bakery producers). A presentation called "The status and problems of normative bases for flour fortification in Kazakhstan" was made.
 - e) Participated in and facilitated the training Seminar with specialists of mills on techniques and technology of fortified flour production, 29 June 2006, Ust-

Kamenogorsk, Kazakhstan, having 70 participants (representatives of mills and bakery producers). The presentation “Elaboration of normative bases in the framework of JFPR 9052 project” was made.

- f) Participated in the Seminar “On perspectives of fortified flour production in East-Kazakhstan Oblast”, (29 June, Ust-Kamenogorsk, Kazakhstan) as a facilitator. The medical, technical and technological aspects of flour fortification, normative bases and quality control of WFF were discussed.
 - 1) The presentation “A normative bases for production of fortified wheat flour in East-Kazakhstan Oblast” was made.
- g) Participated in and facilitated the Workshop with decision makers from the agriculture department and representatives from Akimat of East-Kazakhstan Oblast, and participated in the discussions on flour fortification too, 2006.
- h) Participated in and facilitated the Republican Seminar for the specialists of SES Kazakhstan on “Problems of flour fortification in Kazakhstan”, 29 October 2006, Almaty, Republican SES. The presentation “A normative bases for flour fortification in Kazakhstan” was made.
- i) Participated in and facilitated the Republican Seminar for the specialists of SES Custom Service of Kazakhstan on “Monitoring iodized products in Kazakhstan”, 30-31 October 2006, Almaty, Republican SES.
- j) Normative documents and standards elaborated by KAN were transmitted to enterprises producing fortified flour in accordance with appropriate agreements between KAN and these factories.
- k) Continued making of contract for transmitting of standard-technical documents, elaborated by Kazakh Academy of Nutrition, to enterprises establishing the production of fortified flour, bread, and rolls and buns.
- l) Comments of key specialists for the draft standard “A preliminary mix for wheat flour fortification” were collected, the standard is now updated and under consideration by the State Sanitary Surveillance and the Gosstandard of the Republic of Kazakhstan.
- m) Responses on the comments by experts for the State Standard «Bread, and rolls and buns from wheat flour fortified by vitamin-mineral premix KAP-Komplex №1» have been prepared.

(v) TO DEVELOP SPECIFICATIONS OF KAP PREMIX

28. Two new premixes (KAP Komplex # 2 and KAP Komplex # 3) were developed by KAN in April 2005 for flour fortification in Central Asia. According to descriptions and applications of these premixes:

- a) “KAP Komplex # 2” contains seven micronutrients: ferrous sulfate as the iron source, thiamin mononitrate, riboflavin, niacinamide, folic acid and zinc oxide, and additionally includes vitamin B₁₂ as cyanocobalamine. It can be used for fortification of premium grade and 1st grade wheat flour used in bakeries and pasta products, or where the flour will be stored for not more than two months. For premium or

supreme grade the recommended addition rate is 150 grams per metric ton of flour. For 1st grade flour the recommended addition rate is 120 grams per metric ton of flour.

- b) “KAP Komplex 3” contains two micronutrients: folic acid and FeNaEDTA as the iron source. KAP Komplex #3 is designed for the fortification of high extraction flour, such as 2nd grade flour, whole-wheat flour or any flour with ash content higher than 0.8%, and contains high levels of phytates that inhibit the absorption of ferric sulphate and Fe elemental. The recommended addition rate of KAP Komplex #3 to flour of this type is 250 grams per metric ton of flour.
- c) The levels of micronutrients added by KAP Komplex Premixes #1-3 are shown in the table below:

Nutrient	KAP #1		KAP # 2		KAP #3
	ppm, 150 g/MT	ppm, 120 g/MT	ppm, 150 g/MT	ppm, 120 g/MT	ppm, 250 g/MT
Thiamin	2.0	1.6	1.8		
Riboflavin	3.0	2.4	2.4		
Niacin	10	8	10		
Folic Acid	1.5	1.2	1.5		1.2
Vitamin B ₁₂	--		0.004	0.0032	
Iron	50	40	25	20	20
Zinc	22	17.6	20	16	

29. Prof. T.Sharmanov, M. Aijanov, Y. Sinyavski and Sh. Tazhibayev:

- a) Developed The Standard of Organization “The vitamin-mineral mix ‘KAP Komplex #1’ for fortification of wheat flour”. The standard is approved (27.02.2006) by the Gosstandard of the Republic of Kazakhstan, number CT TOO 40261271-01-2006. The standard has Kazakh (5 pages) and Russian (5 pages) versions. *See attached file: StandardOrganiz-nPremix-CT TOO 40261271-01-06.pdf*
- a) The State Standard “Vitamin-mineral premix “KAP Komplex 1”, which is coordinated with The Ministry of Health and The Committee on Technical Regulation and Metrology of the Republic of Kazakhstan, is under consideration, 12 p. *See attached file: StandardRK-PremixKAP Complex-06-Rus.pdf*
- b) The State Standard “Bread and bakery products from wheat flour fortified with vitamin-mineral premix “KAP Komplex 1” is under consideration, 12 p. *See attached file: StandardRK-BfreadFrom FWF-06-Rus.pdf*

30. Prof. M. Aijanov, Y. Sinyavski and Sh. Tazhibayev:

- a) Developed The Standard of Organization “The wheat flour fortified by vitamin-mineral mix ‘KAP Komplex #1’”. The Standard’s approval (27.02.2006) is number CT TOO 40261271-02-2006 by the Gosstandard of the Republic of Kazakhstan. The standard has Kazakh (7 pages) and Russian (7 pages) versions. *See attached file: StandardOrganiz-nFWF-CT TOO 40261271-02-06.pdf*

31. Prof. Y. Sinyavski, E. Gan, V.Lagoda:

- a) Developed The Standard of Organization “Bread and Bakery Products fortified by vitamin-mineral mix ‘KAP Komplex #1’”. The Standard is approved (17.05.2006) by the Gosstandard of the Republic of Kazakhstan, number CT TOO 40261271-07-2006.

The standard has Kazakh (9 pages) and Russian (9 pages) versions. *See attached file: StandardOrganiz-nFWF-CT TOO 40261271-02-06.pdf*

32. Development of the Standard of the Republic of Kazakhstan “Wheat Flour. General Technical Specifications”, which has been implemented since 1 January 2007. The standard was elaborated by: Kazakh Academy of Nutrition; Alliance of Millers and Bakers of Kazakhstan, and Research and Production Center of Reprocessing and Food Industry, Republic of Kazakhstan.
33. Prof. M. Aijanov and Y. Sinyavski. WFF/IDA consultants:
- The issues on production of premix for flour fortification have been discussed jointly with the specialists from Stepnogorsk factory “Biomedpreparat”, and the first lot of vitamin-mineral premix has been produced. Now the premix is being certified. Rendering a consultative and methodical assistance to the specialists of Stepnogorsk factory “Biomedpreparat” on the issues of production of vitamin-mineral premix.
 - The work for elaboration of the premixes KAP-Kompleks #2 and #3 for fortification of flour, confectionary and macaroni products is continued.
 - A final version of the draft of the State Standard “A Preliminary Vitamin-mineral premix for wheat flour fortification” (jointly with the union of millers and bakers of Kazakhstan), which is under consideration by the Gosstandard, Kazakhstan now.

(vi) TO CONDUCT SENTINEL STUDIES TO EVALUATE THE IDD AND IDA LEVELS BEFORE AND AFTER THE PROJECT INTERVENTION

34. Prof. Sh. Tazhibayev:
- The results of the completed sentinel studies in Azerbaijan and Uzbekistan, where positive changes in IDA/IDD were achieved, a simple form for use in advocacy is prepared (*SS-Aze&Uzb-Short-forCommun-nMay06Rus.pdf*).
 - A considerable improvement of iron status was revealed in Uzbekistan, and the iodine status has considerably increased in all the countries, except for Mongolia between two rounds of sentinel study (SS). It was agreed that the third round of the sentinel study will be conducted under JFPR 9052 project and the funds for the study will be allocated in country budgets for the project. KAN signed an agreement with country offices and MoH in the countries to conduct the third round of sentinel study.
 - It was agreed that in each country two field visits by the Country Coordinator for SS to sentinel sites should be done before the fieldwork for data collection in the third round of SS: the first field visit - conceivably in September-October 2005; the second field visit - in 9-10 months (conceivably in June-July 2006). The results of the first field visit should be used for assessment and improvement of the coverage of sentinel population by fortified food products, and the results of the second field visit - for decision making on the timing of data collection fieldwork for the third round of SS. The agreement between ADB and KAN for JFPR 9052 started in January 2006. So, the first field work for SS in Kazakhstan, Tajikistan and Mongolia was conducted in the first quarter of 2006, and in other countries - in the second quarter of 2006.
 - Prepared reports on the results of monitoring field work in sentinel households in all countries (*see files: MonSS3-FirstFieldVisitJan06Eng.pdf; MonSS3-Monitoring06Eng.pdf; KyrSS3-MonitoringDec06-Rus.pdf; KyrSS3-MonitoringDec06-*

Eng.pdf; KazSS3-1-stFieldVisitFeb06Rus.pdf; KazSS3-1-stFieldVisitFeb06Rus.pdf; KazSS3-Monitoring07-Rus.pdf; KazSS3-MonitoringJan07Eng.pdf; UzbSS3-Monitoring06Eng.pdf; UzbSS3-Monitoring06-Rus.pdf; TajSS-3Monitoring06-Eng.pdf; TajSS3-FirstFieldVisitFeb06Eng.pdf; TajSS3-FirstFieldVisitFeb06Eng.pdf; TajSS-3Monitoringj06Rus.pdf).

- e) Prepared recommendations on time schedule for conducting field work for data collection in all countries, third round of sentinel study (*see a file ScheduleFor3-SSE-Feb07--Rus.pdf*).
- f) Field work for data collection in the third round of sentinel study is completed in all the countries (Kazakhstan, Mongolia, Tajikistan and Uzbekistan) except for the Kyrgyz Republic. The coverage of sentinel households in the Kyrgyz Republic by fortified food products is insufficient, and that is why this country is excluded from the third round of the sentinel study.

(vii) TO CONTRIBUTE TO LABORATORY ASSESSMENT FOR IDD AND IDA

35. The specialists of KAN, including ADB Consultants (T.Sharmanov, Sh. Tazhibayev, F.Ospanova, Zh, Tolysbayeva) participate in conducting fieldwork and laboratory analysis in the framework of Multi-indicator cluster survey (MICS) in Kazakhstan.

36. Dr. F.Ospanova:

- a) Received a Certificate on the successful participation in IRLI-Kazakhstan, 2005: Ensuring the Quality of Urinary Iodine Procedures Program.
- b) In the framework of the project “Rapid Assessment of the Household Use and Adequacy of Iodized Salt in the Republic of Kazakhstan”, 2004, the following number of iodine analysis in salt samples were carried out in KAN’s laboratory:
 - 1) In 501 iodized salt samples collected in different areas, the quantitative analysis of iodine by titration method was carried out.
 - 2) In 1478 edible salt samples from households, the iodine was tested by kits.
- c) In the framework of the project “Multi Indicator Cluster Survey (MICS)”, the following samples were analyzed:
 - 1) 4521 urine samples for measuring iodine excretion by spectrofotometric method.
 - 2) 1128 salt samples were analyzed for measurement of iodine by titration method and for determination of the quality and adequacy of salt iodization.

37. Prof. Sh.Tazhibayev:

- a) Participated in laboratory assessments for IDA and IDD in the framework of the project “Multi Indicator Cluster Survey (MICS)” in Kazakhstan.
 - 1) The prevalence of anemia among women of reproductive age (n=4278) in Kazakhstan was assessed using the HaemoCue method.
 - 2) The coverage of households by fortified flour was assessed using qualitative spot test for iron.

- 3) A concentration of vitamin A was analyzed in 1000 blood samples obtained from children of 6-59 months age in order to determine vitamin A deficiency in Kazakhstan.

(viii) TO TEST SELECTED PREMIXES FOR FLOUR FORTIFICATION

38. Prof. Sh.Tazhibayev:

- a) The samples of premix produced in Kazakhstan (9), Germany (3) and India (7) were analyzed in KAN’s laboratory.

(ix) TO CARRY OUT ANALYSES OF COMPOSITE FLOUR SAMPLES FROM EACH PARTICIPATING COUNTRY FOR THE LEVEL OF FORTIFICANTS

39. Prof. Sh.Tazhibayev:

- a) During the report period, 28 samples of FWF of first grade and 16 samples of FWF of supreme grade were analyzed in KAN’s laboratory (*see attached file: FWFanalysis05-1quarter06.pdf*).
- b) During the report period, 10 samples of wheat grain and 12 samples of flour produced in Mexico were analyzed in KAN’s laboratory, and Sh.Tazhibayev prepared a report (*see file Wheat Grain and Flour of Mexico Origin.pdf*).

(x) TO WRITE THE FINAL REPORT BASED ON THE STUDIES AND DISSEMINATE THE RESULTS

40. The final report based on the studies will be prepared and the results will be disseminated in accordance with the Project’s terms and timeline.

ATTACHMENTS (127 files):

- a) T.Sharmanov, Team Leader – 7 files
 - b) Sh. Tazhibayev, KAN’s coordinator – 67 files
 - c) M.Aijanov, WFF/IDA, consultant – 15 files
 - d) Y.Syniavski, WFF/IDA, consultant – 7 files
 - e) F. Ospanova, IDD/USI, consultant – 14 files
 - f) A.Salkhanova and Zh.Tolysbayeva, IEC consultants – 17 files
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