INDICATORS FOR FOOD SECURITY STATISTICS 2015

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CONTENT

List of Acronyms

ENT	Business entities
CTA	Customs and Taxation authority
GDP	Gross domestic production
GoM	Government of Mongolia
GASI	Government agency for specialized inspection
SOME	Statistical office for macro economy
UN	United Nations Organization
SESH	Socia-economic survey of households
MASM	Mongolian agency for Standardization and metrology
SRSO	State registration and statistical office
NSC	National Security Council
NSO	National Statistical Office
MOFA	Ministry of Food and agriculture
MoHS	Ministry of Health and sports
HACCP	Hazards anaylsis and critical control points system

FOREWORD

The first draft of "Estimation of indicators for food security statistics" guideline was developed in 2009, following the Mongolian government's declaration of 2008 the year of "Food security", by the department of macro-economic statistics of National Statistics Office and was later elaborated and approved through joint meeting of draft developers, standing committee for methodology and executive council of NSC. The guideline has remained as main tool for estimating statistical indicators for food security until recently.

National security concept adopted in July 15, 2010, and the Food security law adopted in Dec 20, 2012 by the Mongolian parliament, became new legal framework of food security in the county. The concept and the law provide detailed understanding and definition of food security.

The newly established legal framework urged the needs to improve integrated statistical system for food security, re-design methodology to estimate statistical indicators, make analysis on sources of some statistical indicators and raise consumers' awareness on food security issues. In 2013, the working group was established with the single task to draft the amendments to guideline, by the decision of National Security Council. The working group consisted of representative from central public administration authorities for food security. The updated guideline was finally approved by the NSO chairman decree No. A/12 of 2015, Jan 30.

The establishmet of integrated statistical system and assessment of national food security with greater accuracy, enabled by the use of new guideline, will be expected to provide statistical data crucial for designing and planning of government policies and interventions in public health, food and agriculture sectors, effectively.

The authors of this publication sincerely hope that this guideline will be major source of inspiration and information in future, for designing and planning government interventions, including assessment of food security, availability, accessibility, consumption and sustainability in Mongolia.

SECTION I

METHODOLOGY FOR ESTIMATING FOOD SECURITY STATISTICAL INDICATORS

CONTENT

One. Background

National security concept adopted in July 15, 2010, and the Food security law adopted in Dec 20, 2012 by the Mongolian parliament, serve as legal framework of food security in the county. The concept and the law provide understanding and definition of food security.

The lack of food security statistical indicators database in Mongolia and inability to assess and define food security level accurately impede the usefulness of statistical data in designing and implementing government interventions in health, food and agricultural sectors.

Therefore, the needs for integrating food security information in national statistical data system with regard to both revised and newly adopted laws, redesigning methodology for estimation, analyzing the sources of some statistical data, producing accurate information and publicizing are critical.

Food and Agriculture Organization of the United Nations recommended gathering food security statistical data through statistical surveys including agricultural census, household income and expenditure survey etc, for the assessment of food security, including food availability, accessibility, nutrition and food safety in consideration of necessary indicators at national, local, and household level.

These commitments led to renewal of the guide for estimating indicators for food security statistics.

This publication will guide users to estimate indicators for food security statistics and establish database of FSS.

Two. Definitions of terms used in food security statistics

Components of food security are 1) food availability 2) energy and nutrients intake 3) food safety.

The terms used in this guideline are understood as below:

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life;

Food availability is the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).;

Total food reserve is the sum of domestically produced food and net imported food;

Net export is the sum of total exports minus total imports;

Dietary energy requirements means amount of food with adequate energy and nutrients that are needed for basal metabolism, normal functions of the body, cell function and replacements, and to balance energy expenditure;

Standard population means population selected in order to adjust for different age groups;

Daily intake of foods for standard person means food products to be taken per day, containing enough energy and nutrients that are needed for basal metabolism, normal functions of the body, cell function and replacements, and to balance energy expenditure of a human;

Annual food intake for standard person is sum of daily food intake of standard person (reference intake) multiplied by 365 days;

Annual intake of food commodities for standard population means the sum of daily food intake of standard person multiplied by number of standard population of the mean year;

Percentage of food supply is the comparison of national annual reserve of given food product against annual food intake for standard population;

Food accessibility means adequate nutritious foods available for human;

Food consumption is amount of safe food taken to provide energy and nutrients;

Energy and nutrients means the components in food products, essential for growth and development of body and metabolic system of organism;

Energy is an amount of heat released by heating water vapor by 10C; (heat generated by breaking down 1gr of protein, fat, carbohydrates in human organism);

Nutrients mean proteins, fats, carbohydrates, various vitamins and minerals;

Food safety means safeguarding quality and hygiene of foods and food raw materials at all stages of food value chain;

Food hygiene means conditions and measures taken to ensure food safety from growing, producing, and processing to human consumption;

Food value chain means all activities from inputs, production, fortification, processing, packaging, transporting, storing, stockpiling, marketing, exporting, importing, food production, getting and giving food aids;

Household income means the sum of monetary and non-monetary incomes gained by household members. Monetary incomes are salary, pension, welfares, income from business activities, livestock sales, interest's payments, dividends and other earnings; and non-monetary incomes are free consumptions and gaining from own and other's farms that are expressed in monetary terms.

Household food expenditures mean all monetary expenses paid by households to buy foods;

Three. Food production to estimate indicators for food security statistics, classifications, norms, ratio, data release frequency, sources of data

3.1. Food productions to estimate indicators for food security statistics

Following food commodities from 13 different food groups and drinking water, are used estimate indicators for food security statistics, that provide daily energy and nutrients essential for healthy lives of Mongolian person, including: meat, meat products, milk, dairy products, flour, flour products, grains, sugars, potato, vegetables, pulses, fruits, eggs, edible oil and drinking water

1. Meat and meat products: beef, mutton, goat, camel, horse meats, fish, poultry, pork, wildlife meat, boiled and smoked sausages, raw smoked sausage, offal, canned meat, canned fish, dried meat;

2. Milk: liquid, powder (contains 25% fat), condensed milk;

3. Dairy products: clabber, kephir, yogurt, curds (9% fat), cream, sour cream (25% butterfat), cheese, butter (72% butterfat),dried curds, koumiss, camel's milk, clarified butter, clotted milk, curds cheese;

4. Flour: wheat flour, rye flour, flour from other types of grains;

5. Flour products: all kinds of bread, flour products-boiled or steam boiled, biscuits, wafers, cake products, pastas;

6. All types of rice: rice, millet, buckwheat, other types of rice;

7. Sugars and sweeteners: refined sugar, cube sugar, candies, chocolate, sweets, zephyr, fruit jam, syrup, carbonated, non-carbonated sodas;

8. Potato: fresh potato, French fries, chips, instant mashed potatoes (reconstitutable by adding water), starch, glass noodles;

9. Vegetables: roots and tubers (carrot, winter radish, radish, beetroot, turnip, mustard, parsnip, leek root, root mustard), bulb vegetables (onion, chalot, salad onion, spring onion, garlic, etc), fruit vegetables (tomato, eggplant, pepper, cucumber, pumpkin, sweet melon, water melon), leafy greens (lettuce, Chinese cabbage, spinach, romaine lettuce, chives, celery, etc), flower vegetables (cauliflower, broccoli, artichoke, etc), leaf vegetables (cabbage, salads), herbs and spices (dill, coriander, parsley, leek), pickled, deep-frozen, dried vegetables and mushrooms, ketchup, tomato juice, mushrooms, pickled mushroom;

10. Fruits and berries: seed bearing fruits (apple, pear, hawthorn, ashberry, serviceberry fruit, banana, , chaenomeles fruit, Caucasian persimmon, etc), stone fruits (cherry, prunus fruit, peach, apricot, plum, poppy, etc), natural (wild) and cultivated berries (sea buckthorn, strawberry, black currant, etc), citrus fruits (orange, mandarin, lemon, etc), other fruits, dried fruits and berries, fruits and berries jam, juice, nectar, compote;

11. Pulses: peas, beans, tofu, pickled peas;

12. Egg: fresh chicken and other fowl's egg, egg powder;

13. Edible oil: vegetable oil, butter, grease, margarine, clarified butter;

14. Drinking water: bottled water

Food products, listed in "Strategic products and materials list" adopted by Mongolian Parliament in May 9, 2008, such as flour, all types of rice, sugars, cube sugars, animal meats, canned meat, and other foods that play important role in their respective food production system, national economy, food exports and imports, including those that have higher rates of consumption, are taken into consideration when selecting food products for estimating indicators for food security statistics.

3.2. Classification

Following 3 classifications are used in estimating indicators for food security statistics:

3.2.1 Classification of consumer goods and service for personal use

3.2.2 Classification of generic product and services

3.2.3 Harmonized commodity description and coding system

3.3. Norms and ratios

Following norms and ratios (Annex 1) are used in estimating FSS:

3.3.1 Conversion multipliers for Standard population

3.3.2 Daily and annual intake of food for standard person

3.3.3 Reference daily intake of calories for standard person

3.3.4 Ratio of unit product to main food product

Ratio of unit product to main food products, conversion multipliers for standard population, reference daily and annual intake of food for standard person, reference daily intake of energy for standard person are set by central public administration authority for food and agriculture, and health every 5 years. Upon renewal and approval of ratio, conversion multipliers and norms, the new version shall be used in estimating FSS, immediately.

3.4. Data frequency and organization responsible for data release

- Food security statistical indicators are released on annual basis, at the end of each year.
  * Statistical indicators on Food supply, energy and nutrients are released by central public administration authority for Statistics;
  * Statistical indicators on Food safety are released by central public administration authority for food and agriculture, public administration authority for food control, public administration authority for standardization and metrology.
- Central public administration authorities for food and agriculture, health, food control, standardization and metrology shall submit their food security

statistical indicators to central public administration authority for statistics no later than 20th of January.

- Central public administration authority for statistics shall summarize all food security statistical indicators and deliver them to the working group of National Security Council no later than 1st of May.

3.5. Sources of data

Followings are the sources for data used to estimate food security statistical indicators:

3.5.1 Indicators for food supply:

- For estimation of indicators for food supply statistics at national level :
  • Agricultural production data /Central public administration authority for statistics/
  • Annual industrial production data / Central public administration authority for statistics /
  • Foreign trade statistics / Central public administration authority for statistics /

- For estimation of indicators for food accessibility statistics at household level:
  • Results from random, quarterly socio-economic survey of households / Central public administration authority for statistics /

3.5.2 Statistical indicators related to energy and nutrients intake:

  • Results from random, quarterly socio-economic survey of households / Central public administration authority for statistics /

3.5.3 Statistical indicators related to food safety:

  • Statistical bulletin of central public administration authority for food and agriculture /Central public administration authority for food and agriculture /
  • Food safety statistics and statistical bulletin by an organization /Central public administration authority for food control/
  • Food safety statistics and statistical bulletin by an organization /Central public administration authority for standardization and metrology/

Four. Methodology for estimating indicators for food security statistics, and indicators

Methodologies for estimating indicators for food security statistics including statistical indicators related to food supply; dietary energy and nutrients; food safety, and indicators are listed below:

4.1. Food supply

Methodology for estimating food supply. Food supply statistical indicators are estimated at two levels: national and household.

4.1.1 Food supply at national level. Estimation of food supply, by physical amounts, at national level is carried out through following stages:

1. Defining standard population. In order to estimate food utilization of the population, the standard population needs to be defined. To define standard population, each age group shall be multiplied by conversion multipliers as set out in Annex 1, and summed up.

Size of standard population is calculated using formula below:

$$ХАжиш =\sum(Ка* ХАа)\qquad(1)$$

ХАжиш - size of standard population of the mean year

Ка - conversion multipliers for age group A into standard population

ХАа - size of population in age group A

2. Estimating annual food consumption for standard population.

Annual food utilization for standard person is multiplied by the number of standard population to have annual food utilization amount. Annual food consumption of standard population is estimated by using formula below:

$$ЖХY \text{ жиш}= ЖХ1\text{жиш} * ХА\text{жиш}\qquad(2)$$

ЖХYжиш   - annual food utilization of standard population

ЖХ1жиш -   annual food utilization of standard person

ХАжиш   -   number of standard population of mean year

3. Production, export and import data of food commodities are collected by physical amounts, and amount of consumed reserve is calculated. Total reserve of food commodities that're utilized shall be the sum of domestic production and net export of the mean food commodity. Net export is calculated by the imbalance between import and export. The utilized reserve is calculated using formula below:

$$Нө=ДY+(И-Э)\qquad(3)$$

Нө -   Reserve

ДY - Domestic production

И   - Import

Э   - Export

The utilization of food reserve shall be estimated in each food category.

4. Food supply percentage of is calculated in each category of food commodities, by physical amount. In order to estimate food supply, the food reserve is divided by annual food utilization of standard population and multiplied by 100. Food supply shall be estimated in each food category. The calculation formula:

$$ХХхувь = \frac{Нө*100}{ЖХ\text{жиш}}$$

ЖХжиш - Annual food utilization of standard population

Нө - Reserve

ХХхувь - Percentage of food supply

5. Domestic production and net export values are compared against total consumption of the mean year in order to define the percentage of food supply met by domestic production and imports in the mean year.

4.1.1.1 Sources of data for estimating indicators for food supply statitics at national level:

• For estimating indicators for food commodities reserve, use following data and sources:

- Meat and meat products, milk and dairy products, flour and flour products
        - Livestock production data, socio-economic survey of the households /Central public administration authority for statistics/
        - Industrial data / Central public administration authority for statistics /
        - Foerign trade data / Central public administration authority for statistics /

-Rice, sugars, sweeteners, pulses
        - Foreign trade data / Central public administration authority for statistics /
-Potato, vegetables, fruits and berries
        - Annual harvest report / Central public administration authority for statistics /
        - Foreign trade data / Central public administration authority for statistics /
- Egg
        - Reports on farm animal products / Central public administration authority for statistics /

-Edible oil
        - Industrial data, social-economic survey of households / Central public administration authority for statistics /
        - Foreign trade data / Central public administration authority for statistics /

• For estimating food commodities utilization/consumption, use following data and sources:

- The population size by sex and age groups in the mean year:
        - sedentary population statistics / Central public administration authority for statistics /
        - Conversion multipliers for standard person
                - Established norms, by sex and age groups
        - Daily food utilization for standard person
                - Established norms, 13 food commodities groups, including drinking water
        - Annual food utilization for standard person, by norms
                - Established norms,13 food commodities groups, including drinking water

4.1.1.2 Indicators for food supply: Food supply at national level is evaluated with following indicators:

        • Food supply is stable, if foodstuffs essential for healthy lives of average Mongolian person, is supplied more than 70% by domestic food production. It is not stable if domestic food production supplies less than 70% of domestic need for food.

If the imported food commodities make up less than 30% of total food imports, the country is food soveirgn or the food supply is stable. The country is import dependent if it imports more than 30% of its food commodities.

Note: This indicator is reflected in the national security concept.

4.1.2 Food accessibility at household level

Complex indicators are used to assess food accessibility at household level, including household food consumption, food inadequacy, fear of food inadequacy, underlying causes of food inadequacy, etc. Household food accessibility is assessed in urban and rural areas in following steps depending on seasonality:

1. Daily intake of food for standard household member is defined and compared against norms.

1.1. Define monthly household food consumption and number of standard person of respondent households.

1.2. Use ratio of unit product (liquid milk, carcass meat, flour, sugar) to meat and meat products, milk and dairy products, flour and flour products.

1.3. Define monthly food utilization of standard person by dividing total food consumption of respondent households by number of standard person.

1.4. Divide monthly food utilization of standard

person by 30 days to have daily food consumption amount of standard person.

1.5. Compare surveyed daily food intake of standard person against reference daily intake of food.

The difference between actual food intake and reference intake is expressed in physical value and percentage.

2. The percentage of food expenditures on total household expenditures is calculated by dividing monthly household income by monthly food expenditure and multiplied by 100. The percentage of food expenditure shall be calculated at urban, rural and national levels.

3. The percentage of food commodities expenditures on total household expenditures is calculated by dividing household monthly income by monthly expenditures on food commodities and multiplied by 100. The calculation of percentage of main foodstuff expenditures shall be made at urban, rural and national level.

4. Main types of food for consumption: Main types of foods are defined in 13 food groups such as meat, milk, etc, at urban, rural and national level.

5. Amounts of foodstuff consumed: Consumed amounts are defined by food types, on daily, monthly, annual basis at urban, rural, and national levels.

6. Daily frequency of consumption: The frequency of consumption of particular foodstuff per day is estimated by number of times the particular foods are eaten per day. The frequency is assessed during household based survey, at

urban, rural and national levels.

7. The months of food inadequacy: This is assessed during household based survey and identified by a question of "In which particular month/s in a year do you feel food inadequacy, comparing to other months?". The assessment shall be made at urban, rural and national levels.

8. Underlying factors of food inadequacy: Underlying factors, such as loss of harvest; inability to work due to sickness, trauma, disabledness, old age etc; lack of land, tools, equipment, machineries; big number of people in household, are identified by asking guiding questions during household based survey. Percentage of underlying factors is calculated by summing up "yes" answers to these questions by respondent households. It shall be assessed at urban, rural and national levels.

9. Measures taken to prevent and overcome food inadequacy by households:
It can be measured by household activities such as use of savings, bank credits, sales of livestock and lands, change of employment, expansion of household business, taking grants from relatives, neighbors, government, charity and international organizations, in order to buy foods. The percentage of such households is calculated by dividing total number of respondent households by number of households who actually took these measures. It is assessed at urban, rural and national levels.

10. Households who have fear of year around food inadequacy: This is assessed by number of households who admitted and answered "yes" to question if they fear of year around food inadequacy due to natural disasters, loss of har-

vest, unemployment. The percentage of such households is calculated by dividing total number of respondent households by number of households who answered ""yes". It is assessed at urban, rural and national levels.

11. Types of natural disasters that have adverse effects in food adequacy: This is defined by natural disasters that are beyond reasonable control of humans, such as flood, drought, dzud, storm, thunder, and earthquake. The type of disasters is calculated by dividing total number of respondent households by number of households who choose any of those answers. It is assessed at urban, rural and national levels.

12. The amount of agricultural production loss due to natural disasters: It is measured by actual loss of agricultural productions as a result of natural disasters. The loss is categorized as mild, medium and heavy and measured by comparing production loss in the mean year against normal year's. If the loss is lower than 20% against normal year's, it is considered as "mild", upto 30%-medium, and heavy if it is higher than 30%. It is assessed at urban, rural and national levels.

4.1.2.1 Data and sources to estimate indicators for food accessibility statistics at household level

Following data and sources are used to estimate indicators for food accessibility statistics at household level:

- Actual daily food consumption of standard person
- Socio-economic survey of households /Central public administration authority for statistics/

4.1.2.2 Indicators for food accessibility. Following indicators are used to assess food accessibility:

If the actual daily intake of food for standard person, revealed by survey, is lower than the reference daily intake of food, food accessibility at household level is weak or the household is food inadequate. If it is equal or higher, the household is food secure.

4.2. Food energy and nutrients

Methodology to estimate intake of dietary energy and nutrients. Food provides macronutrients, vitamins, minerals and micronutrients to human. Macronutrients are protein, fat and carbohydrates.

Calorie (kcal) is unit that is used to measure energy and nutrients.

Carbohydrates are found largely in grain products including rice, pastas, bread. Carbohydrate provides 4 calories per gram.

Fat is mainly found in livestock products, vegetables, nuts, fishery products, sunflower, and pumpkin. Fat provides 9kcal per gram.

Protein is found in meat, tofu, soybean, egg, cereals, dairy products, milk, and cheese. Protein provides 4kcal per gram.

Following norms are used to measure energy and nu-

trients intake in cold and summer seasons (Table 3, 4 in Annex 1).

Intake of dietary energy and nutrients are measured in following steps/:

1. Define household food consumption. Household food consumption is measured by types of food products in physical amounts.

2. Products are converted into similar products. Meat and meat products (canned meat, sausages, etc), milk and dairy products (curds, curd cheese, etc), flour and flour products (pastries, biscuits, pastas, etc) are converted into unit products (milk, meat, flour, sugars) using conversion ratio as set out in Table 5-16 in Annex 1.

3. Household members are converted into standards person. Using conversion multipliers, all household members from different age groups and sex are converted into standard person.

4. Individual's food consumption is measured in each food category. Daily food intake for standard person is calculated by summing up all respondent households' food consumption and all standard persons in households then have the sum divided by number of standard persons. Daily food intake for standard person needs to be calculated in each food category.

5. Then, standard person's daily intake of dietary calories is calculated. Daily intake of calories for standard person is estimated by comparing daily food intake against reference

daily intake of energy and nutrients.

National average consumption of calories per standard person is calculated at urban, rural levels on winter and summer basis.

4.2.1 Data and sources for estimating statistical indicators related to energy and nutrients intake:

- Daily food intake for standard person

-Socio-economic survey of households /Central public administration authority for statistics/

4.2.2 Indicators for dietary energy and nutrients intake

Statistical indicators related to energy and nutrients intake through food is evaluated by below indicators.

- Actual daily intake of energy and nutrients for standard person, revealed by survey, is compared against recommended daily intake of calories. If actual intake is below 90% of recommended value, the intake is inadequate. If it is equal to 90-109% of recommendation, the intake is normal. Higher means excessive intake.

4. 3 Food safety statistical indicators

Indicators for food safety statistics cover wider areas, including level of food contamination; number of accredited laboratories registered nationwide; amount of domestically produced and/or imported food products that are returned,

confiscated and disposed off; data concerning food hygiene and sanitary, production, standards, and number of food standards in force; number of national standard equivalent to international standards; and number of MNS mark holder-producers in the country.

4.3.1 Statistical indicators to estimate food safety

1. Level of food contamination revealed by tests at accredited laboratories - It is expressed by the percentage of food found contaminated during regular tests of food products at accredited labs. Contamination is revealed by chemical, bacteriological, heavy metal, toxin, plant quarantine and inspection, and radiological testing for all 13 food commodity groups and drinking water.

2. Amount of domestically produced and imported foods confiscated, returned, removed from shelf, re-processed and disposed off: This is the total amount of returned, confiscated, removed from shelves, re-processed and disposed off food products due to non-conformity to hygiene, sanitary and safety standards, as revealed by food control and tests during the reporting period. The contamination amount is defined for all 13 food groups and drinking water, separately for domestically produced and imported foods.

3. Number of food producing individuals and entities whose activities were inspected, suspended, and restored: This is the total number of entities and individuals whose activities were inspected, suspended and restored during reporting period. This number shall be defined according to types and forms of food producers. Food producers mean all players, including individuals and entities, who participate in food value chain.

4. Record of violations that were revealed and corrected: The violations are recorded in following categories:

- Violations of norms and standards for food production and service facilities and locations
- Violations related to work place, tools and equipment use, and hygiene
- Violations related to technology issues
- Violations related to workers' hygiene and sanitary
- Violations related to quality and safety of raw materials and final products
- Violations related to food storage and transportation
- Violations related to packaging, labeling of products
- Violations related to internal control

5. Number of accredited food testing laboratories: This is the number of state and non-state food testing laboratories accredited by accreditation body that these labs are operating according to MNS/ISO 17025 standard.

6. Number of food related national, international, regional, and foreign country's standards, technical regulations effective in the country: This is the total number of domestic standards such as MNS, CAC and international standards effective in Mongolian food sector, for technical requirements, test methods, terms.

7. Number of food products holding conformity certificate: This is the sum of food products, certified that they fully conform to the standards, technical regulations, respective norms and normatives, established specifications and re-

quirements by designated authorties.

8. Number of factories that introduced international quality management system: This is the number of factories whose quality management system is recognized and certified by designated internationall body.

9. Number of factories that introduced good manufacturing practices and hazard analysis and critical control points in their production system: This is the total number of factories that are certified to have GMP and HACCP introduced, by designated authority.

10. Number of fortified food producers, by production types, percentage of fortified food and types - This is the number of factoies producing fortified flour and salt products. It is also the ratio of flour and salt products, fortified with micronutrients in order to prevent micronutrients defficiency among population, to overall production of said products.

11. Number of population who have access to safe drinking water - This is the number population who have reliable access to safe drinking water from water kiosks, water trucks, etc.

12. Number of alchol and alcoholic beverage producers, and alcoholic beverages sales licensed points per 10,000 people - This is the total number of alcohol and alcogolic beverage producers. The number of sales points per 10,000 is calculated by dividing number of sales points by total number of populatiion then multiplied by 10,000.

13. Amount of alcohols and alcoholic beverages per capita The amount is calculated by dividing total dometsically produced and imported alcohols and alcoholic beverages in the

mean year by total number of population and adult population. Eveyone aged 15 and above are adult population.

14. Number of incidents of food borne disease outbreak, morbidity and mortality cases including number of hospitalized patients -This is the sum of bacterial and chemical food poisoning incidents and cases of infections. The number of patients are defined by the number of hospitalized people.

4.3.2 Data and sources to estimate indicators for food safety statistics:

- Indicators 1-4 in food safety statistics

* Statistical bulletin / Central public administration authority for food control/

- Indicators 5-9 in food safety statistics

* Statistical bulletin /Central public administration authority for standardization and metrology/

- Indicators 10, 12 in food safety statistics

* Statistical bulletin / Central public administration authority for food and agriculture/

- Indicators 11, 13 in food safety statistics

* Population and household database, industrial data /Central public administration authority for statistics /

- Indicators 14 in food safety statistics

* Statistical bulletin / Central public administration authority for health/

4.3.3 Indicators for food safety statistics

Evaluation of indicators for food safety statistics are carried out in following manner.

The increase of positive indicators for food safety statistics by 60-80%, and the decrease of negative indicators by same value as above, against the previous year, means food safety is ensured. The increase of positive indicators for food safety statistics by 40-60%, and the decrease of negative indicators by same value as above, against the previous year, means food safety is positive. If the positive indicators are increased by 20-40% and negative indicators decreased by same value, food safety is in downward tendency, while, only marginal increase and decrease of positive and negative indicators below 20% means food safety is not secure.

Indicators 5-11 for food safety statistics are positive indicators, while 1-4, 12-14 are negative indicators.

Five. Database of food security statistics

Food security statistical indicators database shall be established including main and sub indicators that are used to alert and indicate food security issues in the country. Database includes following information:

5.1 Main indicators for food security statistics

5.1.1 Food availability and accessibility indicators

5.1.2 Food energy and nutrients indicators

5.1.3 Food safety indicators

- Level of food contamination: Level of chemical and bacterial contamination.

- Amount of imported foods returned, confiscated and disposed off.

- Amount of domestically produced foods confiscated and disposed off.

- Number of business entities and individuals inspected.

- Number of business entities, individuals, whose activities were terminated, temporarily suspended and restored during inspection process.

- Violations revealed and corrected during inspection process: Domestic raw materials and final products' safety level

- Level of conformity of imported foods to food safety requirements.

- Storage and transportation conditions for food raw materials and final products.

- Nationwide number of accredited food testing laboratories.

- Number of domestic standards MNS, CAC, and international standards effective in food sector of Mongolia.

- Number of international, regional, foreign country's standards adopted as domestic standards.

- Number of food products holding certificate of conformity.

- Number of factories that introduced international quality management system, and accredited by designated international body.

- Number of factories that introduced good manufacturing practices and hazards analysis and critical control points in production system.

- Ratio of fortified foods to overall food production, by product types.

- Number of food fortification factories, by product types.

- Number of population having secure access to safe drinking water.

- Number of alcohols and alcoholic beverages producing factories.

- Number of sales points licensed to sell alcoholic beverages per 10,000 populations.

- Amount of alcohols and alcoholic beverages per capita and adult individual.

- Number of food borne illness outbreak, number of people affected and morbidity, mortality cases.

5.1.4 Points of food production and service

- Number of food producing entities, by product type

- Number of grocery stores, supermarkets

- Number of food markets

- Number of food storages and capacity, by product type

- Number of canteens, restaurants, eating places

- Number of factories producing bottled water, alcoholic and nonalcoholic beverages

- Number of sales points licensed to sell alcoholic beverages per 10,000 populations.

5.1.5 Food related health data

- Number of morbidity cases associated with food borne illness, at urban and rural level

- Other data on food related health issues

- Prevalence of stunting among children under 5, at urban and rural level

- Number of patients with food borne diseases and infections caused by bacteria, at urban and rural   levels

- Number of patients with food borne diseases and infections caused by chemicals, at urban and rural   levels

- Number of morbidity and mortality cases associated with food poisoning and infections, at   urban and rural levels

5.2 Other indicators used to estimate food security

5.2.1 Agriculture
- Number of livestock, by types
- Number of dam animal, by types
- Number of animals slaughtered for food, by types
- Meat production
- Dairy production
- Size of agricultural tenure, by hectare
- Size of cultivated area, by types of crop
- Size of harvested area, by types of crop
- Total harvest, by types of crop
- Yield per ha, by types of crop
- Cereals production and cereal producing area to meet the standard population demand for flour, by estimation

5.2.2 Agricultural production
- Livestock
- Agriculture

5.2.3 Agriculture, value added (% of GDP)
- Livestock
- Agriculture

5.2.4 Industry
- Production of food commodities, by physical amount
- Production of alcohols and alcoholic beverages, by types
- Amount of alcohols and alcoholic beverages per capita, adult individual, by physical amount
- Production of bottled water, by physical amount

5.2.5 Foreign trade
- Food commodity import, by physical amount and country of origin
- Food commodity export, by physical amount and country of destination
- Bottled water import, by physical amount and counry of origin

5.2.6 Price
- Import price for food commodities
- Export price for food commodities
- Producer's price for food commodities
- Market price for food commodities
- Wholesale price for food commodities

5.2.7 Population size
- Size of sedentary population, by sex and age groups

5.2.8 Number of employees
- Number of employees, by sector
- Number of people employed by livestock sector
- Number of agricultural employees
- Number of households and entities in agriculture

5.2.9 Drinking water
- Number of water kiosks
- Number of water trucks
- Number of population having secure access to safe drinking water
- Level of bacterial and chemical contamination in central water supply system
- Level of bacterial and chemical contamination in non-central water supply systems

5.2.10 Industrial data, by production and commodity types
- Number of factories
- Size of production
- Capacity of production / utilization of capacity/
- Introduction of good manufacturing practices in production system
- Introduction of quality control system in production management

5.2.11 Production of bottled water, alcoholic and non-alcoholic beverages, by types of main products
- Number of factories
- Size of production
- Capacity of production /utilization of capacity/
- Introduction of good manufacturing practices in

production system
- Introduction of quality control system in production management

5.2.12 Food sales, by types of products
- Volume
- Installed capacity
- Utilized capacity
- Introduction of good practices
- Introduction of quality control system in management

5.2.13 International trade data on food commodities from 13 food groups and drinking water, by sites of customs clearance
- Volume
- Value in USD

5.2.14 International trade data on alcoholic and non-alcoholic beverages, by sites of customs clearance:
- Volume
- Value in USD

5.2.15 International trading of food commodities, by means of transportation and product types
- Volume
- Value in USD

5.2.16 Storage of for commodities from 13 food groups and drinking water during international trading
- Volume
- Value in USD

5.2.17 Foodservice production, by types

    - Number of foodservice distributors

    - Installed capacity

    - Utilized capacity

    - Introduction of good practices

    - Introduction of quality control system in management

5.2.18 Data on food aids, by donating countries and product types:

    - Types of food products

    - Name of donating country

    - Quantity

    - Value in USD

Annex 1

Table 1. Conversion multipliers for standard person

Age groups	Gender	Line number	Conversion multiplier
A	B	C	1
Upto 1 year	эм, эр	1	0.38
1-3 years	эм	3	0.48
	эр	4	0.50
4-6 years	эм	5	0.64
	эр	6	0.68
7-10 years	эм	7	0.72
	эр	8	0.87
11-14 years	эм	9	0.74
	эр	10	0.96
15-18 years	эм	11	0.87
	эр	12	1.05
19-24 years	эм	13	0.82
	эр	14	1.04
25-50 years	эм	15	0.78
	эр	16	0.99
51 and above	эм	17	0.72
	эр	18	0.81

Table 2. Reference daily, annual intake of foods for standard person, in physical value

Types of food	Line number	Daily intake of food for standard person, in kg	Annual intake of food for standard person, in kg
A	B	1	2
Meat and meat products	1	0.200	73.0
Milk	2	0.150	54.8
Dairy products	3	0.200	73.0
Flour	4	0.100	36.5
Flour products	5	0.220	80.3
All types of rice	6	0.078	28.5
Sugars	7	0.023	8.4
Potato	8	0.140	51.1
Vegetables	9	0.200	73.0
Fruits and berries	10	0.180	65.7
Pulses	11	0.090	32.9
Egg	12	0.019	6.9
Edible oil	13	0.025	9.1

Table 3. Reference intake of energy for standard person, in summer

A	B	Daily intake of calories for standard person, kcal*	Protein	Nutrients (gr) Origins Animal	Plant	Fat	Origins: Animal	Plant	Carbo-hydrates
		1	2	3	4	5	6	7	8
Meat and meat products	1	281	28	28	0	19	19	0	0
Milk	2	160	10	10	0	9	9	0	10
Dairy products	3	166	8	8	0	9	9	0	12
Flour	4	325	9	0	9	1	0	1	70
Flour products	5	452	12	0	12	2	0	2	95
All types of rice	6	269	9	0	9	0	0	0	57
Sugars	7	92	0	0	0	0	0	0	23
Potato	8	123	3	0	3	0	0	0	28
Vegetables	9	28	2	0	2	0	0	0	5
Fruits and berries	10	265	17	0	17	2	0	2	45
Pulses	11	84	1	0	1	0	0	0	20
Egg	12	30	2	2	0	2	2	0	0
Edible oil	13	225	0	0	0	25	0	25	0
total	14	2500	101	48	53	69	39	30	365

Table 4. Reference intake of energy for standard person, in cold season

A	B	Daily intake of calories for standard person, kcal*	protein	Nutrients (gr) Origins Animal	Plant	Fat	Origins: Animal	Plant	Carbo-hydrates
		1	2	3	4	5	6	7	8
Meat and meat products	1	374	38	38	0	25	25	0	0
Milk	2	120	7	7	0	7	7	0	7
Dairy products	3	113	6	6	0	6	6	0	8
Flour	4	325	9	0	9	1	0	1	70
Flour products	5	452	12	0	12	2	0	2	95
All types of rice	6	269	9	0	9	0	0	0	57
Sugars	7	92	0	0	0	0	0	0	23
Potato	8	123	3	0	3	0	0	0	28
Vegetables	9	28	2	0	2	0	0	0	5
Fruits and berries	10	265	17	0	17	2	0	2	45
Pulses	11	84	1	0	1	0	0	0	20
Egg	12	30	2	2	0	2	2	0	0
Edible oil	13	225	0	0	0	25	0	25	0
total	14	2500	106	53	53	70	40	30	358

RATIO OF UNIT PRODUCT INTO MAIN FOOD PRODUCT

Table 5. Ratio of carcass meat to meat and meat products

No	Types of meat	Ratio
1.1	Livestock meat	1.0
1.2	Pork, poultry and fish	1.0
1.3	Wildlife meat	1.0
1.4	Boiled sausage	1.1
1.5	Boiled and smoked sausage	1.4
1.6	Raw smoked sausage	2.6
1.7	Offal	1.4
1.8	Canned meat	1.3
1.9	Dried meat	5.7
1.10	Canned fish	1.57

Table 6. Ratio of liquid milk to milk and dairy products

Д/д	Нэр төрөл	Шилжүүлэх итгэлцүүр
	2.1. Industrially processed milk and dairy products	
2.1.1.	Drinking milk *	1.0
2.1.2	Powdered milk (fat 25%)	8.6
2.1.3	Condensed milk	2.7
2.1.4	Clabber products* (clabber, kephyr, yogurt, etc)	1.0
2.1.5	Curds (fat 9%)	6.7
2.1.6	Milk cream and sour cream (fat 25%)	7.8
2.1.7	Cheese	8.8
2.1.8	Butter (fat 72%)	22.5
2.1.9	Dried curds	10.0

	2.2. Traditionally processed milk and dairy products	
2.2.1	Fermented products (clabber, koumiss, camel milk)	1.0
2.2.2	Clarified butter	25.0
2.2.3	Clotted milk	16.7
2.2.4	Curds cheese	13.0

Note: * - fat content in raw and processed products is 1:1.

Table 7. Ratio of flour to flour products

No	Types of flour products	Ratio
3.1	Wheat flour	1.0
3.2	Rye flour	1.0
3.3	Flour of other grains	1.0
3.4	All types of breads	0.74
3.5	Boiled flour products	0.65
3.6	Steam boiled flour products	0.60
3.7	Biscuits	0.60
3.8	Wafer	0.25
3.9	Cakes	0.15
3.10	Pastas	1.0

Table 8. Ratio of unit product to all types of rice

No	Types of products	Ratio
4.1	Rice	1.0
4.2	Buckwheat	1.0
4.3	Millet	1.0
4.4	Other rice	1.0

Table 9. Ratio of sugar to sugar products and sweeteners

No	Types of products	Ratio
5.1	Refined sugar	1.0
5.2	Cube sugar	1.0
5.3	Candy	0.96
5.4	Chocolate, sweets, zephyr	0.46
5.5	Fruit jam, syrup	0.46
5.6	Carbonated, non-carbonated soda drinks	0.47

Table 10. Ratio of fresh potato to potato and potato products

No	Types of products	Ratio
6.1	Fresh potato	1.0
6.2	French fries	2.0
6.3	Chips	4.0
6.4	Instant mashed potato (reconstitutable by adding water)	8.5
6.5	Starch and glass noodle	10.0

Table 11. Ratio of fresh vegetable to vegetables

No	Types of products	Ratio
7.1	Root and tubers (carrot, winter radish, radish, beetroot, turnip, mustard, parsnip, leek root, root mustard)	1.0
7.2	Bulb vegetables (onion, chalot, spring onion, salad onion, garlic, etc)	1.0
7.3	Seed bearing vegetables (tomato, eggplant, capsicum, cucumber, pumpkin, sweet melon, watermelon)	1.0
7.4	Leafy greens (lettuce, Chinese cabbage, spinach, salad greens, chives, celery, etc)	1.0
7.5	Flower vegetables (cauliflower, broccoli, artichoke, etc)	1.0
7.6	Leaf vegetables(cabbage, salads, broccoli, round salads)	1.0
7.7	Herbs and spices (dill, coriander, celery, leek)	1.0
7.8	Pickled vegetables	1.3
7.9	Deep-frozen vegetables	1.3
7.10	Dried vegetables, mushroom	9.0
7.11	Ketchup	2.48
7.12	Tomato juice	1.64
7.13	Mushroom	1.0
7.14	Pickled mushroom	1.25

Table 12. Ratio of fresh fruit to fruits and berries

No	Types of products	Ratio
8.1	Seed bearing fruits (apple, pear, hawthorn, ash-berry, serviceberry fruit, banana, chaenomeles fruit, Caucasian persimmon, etc)	1.0
8.2	Stone fruits (cherry, prunus fruit, peach, apricot, plum, poppy, etc)	1.0
8.3	Natural (wild) and cultivated berries (sea buck-thorn, strawberry, black currant, etc)	1.0
8.4	Citrus (orange, mandarin, lemon, etc)	1.0
8.5	Other fruits	1.0
8.6	Dried fruits and berries	3.23-5.0
8.7	Pickled fruits and berries	0.85
8.8	Fruit juice and nectar	0.7
8.9	Compote	0.68

Table 13. Ratio of unit product to pulses

No	Types of products	Ratio
9.1	Peas, beans, soybean	1.0
9.2	Tofu	0.6
9.3	Pickled peas and beans	1.3

Table 14. Ratio of fresh egg to egg and egg products

No	Types of products	Ratio
10.1	Fresh chicken egg	1.0
10.2	Eggs of other fowls	1.0
10.3	Dry egg	24.84

Table 15. Ratio of unit product to edible oil

No	Types of products	Ratio
11.1	Vegetable oil	1.0
11.2	Butter	1.0
11.3	Grease fat	1.0
11.4	Margarine	0.8
11.5	Clarified butter	1.2

SECTION II

INDICATORS FOR FOOD SECURITY STATISTICS

In order to estimate food availability, the national annual food reserve is divided by annual food consumption for standard population.

13 commodity foods groups, identified by Nutrition research center of MoH, are used for the estimation of food supply statistical indicators, including meat and meat products; milk and dairy products; flour and flour products; all types of rice; sugar and sweeteners; potato; vegetables; pulses; fruits and berries; egg; edible oil.

1. Standard population

The sedentary population in Mongolia was 2990.2 thousand, and standard population was 2418.5 thousand as of the end of 2015, with increase of 52.3 thousand or 1.8%, and 25.6 thousand or 1.1% against in 2014, respectively.

Table 1

Population

Thous.person

	2012	2013	2014	2015	2015/2014 difference	%
Number of sedentary population	2 809.7	2 870.9	2 937.9	2 990.2	52.3	101.8
Number of standard population*	2 303.7	2 346.9	2 392.9	2 418.5	25.6	101.1

*estimation by NSO

2. Annual food demand for standard population. Based on national food consumption of 13 food groups in 2015, the national demand for food in 2015 was estimated at 176.5 thousand tons of meat and meat products, 132.5 thousand tons of milk, 176.5 thousand tons of dairy products, 88.3 thousand tons of flour, 194.2 thousand

tons of flour products, 68.9 thousand tons of rice, 20.3 thousand tons of sugars and sweeteners, 123.6 thousand tons of potato, 176.5 thousand tons of vegetables, 79.6 thousand tons of pulses, 158.9 thousand tons of fruits and berries, 16.7 thousand tons of egg, 22.0 thousand tons of edible oil (Table 2).

Annual food demand for standard population was increased by 0.2-2.1 thousand tons compared to previous year. The biggest increase was recorded in demand for meat and meat products, dairy products, vegetables, and flour products at 1.8-2.1 thousand tons.

Table 2

Annual food demand for standard population

Food categories	Annual food consumption of standard person*, kg	Annual food consumption of standard population, thous.ton	
		2014	2015
Meat and meat products	73.0	174.7	176.5
Milk	54.8	131.1	132.5
Dairy products	73.0	174.7	176.5
Flour	36.5	87.3	88.3
Flour products	80.3	192.1	194.2
All types of rice	28.5	68.2	68.9
Sugars, sweeteners	8.4	20.1	20.3
Potato	51.1	122.3	123.6
Vegetables	73.0	174.7	176.5
Fruits and berries	65.7	157.2	158.9
Pulses	32.9	78.7	79.6
Egg	6.9	16.5	16.7
Edible oil	9.1	21.8	22.0

Source: MoH

3. Consumption.
In 2015, total of 392.1 thousand tons of meat and meat products, 227.6 thousand tons of flour and flour products, 180.8 thousand tons of potato, 114.2 thousand tons of vegetables were supplied at national level.

Table 3

Consumption, by physical amount, in thousand tons

Main food types	Consumption		Domestic production		Net export	
	2014	2015*	2014	2015*	2014	2015*
Meat and meat products	270.7	392.1	259.4	385.6	11.4	6.5
Flour and flour products	245.0	227.6	228.4	209.2	16.6	18.4
Potato	162.4	180.8	161.5	163.8	0.9	17.1
Vegetable	164.1	114.2	104.9	72.3	59.2	41.8

Sources: NSO, CTA

*Preliminary results

4. Level of food supply.
The supply of flour, vegetables declined by 7.1-29.3 points against in previous year, while meat and meat products and potato supply increased by 13.5-67.1 points.

Table 4

Food supply level, by percentage

Main food types	Annual food demand for standard population, thous. tons		Consumption, thous.tons		Supply level, percentage	
	2014	2015	2014	2015	2014	2015
Meat and meat products	174.7	176.5	270.7	392.1	155.0	222.1
Flour and flour products	279.4	282.5	245.0	227.6	87.7	80.6
Potato	122.3	123.6	162.4	180.8	132.8	146.3
Vegetable	174.7	176.5	164.1	114.2	93.9	64.7

In 2015, domestic production was enough to satisfy 97.1% of standard population's annual demand for meat and meat products, 90.6% of potato, 91.3% of flour and flour products, 62.7% of vegetables demands.

Table 5

2015 Food supply level, by sources

Main types of food	Consumption, thous. tons	Domestic production	Import	Supply level	
				Domestic production	Import
Meat and meat products	392.1	380.7	11.3	97.1	2.9
Flour and flour products	227.6	207.8	19.8	91.3	8.7
Potato	180.8	163.8	17.1	90.6	9.4
Vegetable	114.2	71.6	42.6	62.7	37.3

TWO. STATISTICAL INDICATORS FOR FOOD ACCESSIBILITY

Household food supply was estimated by food accessibility at household level. Household food accessibility was measured at urban and rural levels in cold and warm seasons.

1. Actual food intake for standard person

The results from socio-economic survey of households showed that the actual consumption of meat and meat products, milk and dairy products, flour, rice, sugars and sweeteners and plant oil at rural level in summer, was higher than the national average, while urban consumption of flour products, potato, vegetables and egg was above national average during summer period.

Table 6

National average of daily food intake for standard person in urban and rural areas during summer period 2015 /in grams/

Types of food products	National average	Urban	Rural
Meat and meat products	324.0	262.9	430.5
Milk	239.6	179.4	344.7
Dairy products	561.9	432.4	787.8
Flour	183.6	123.7	288.2
Flour products	198.4	237.3	130.4
All types of rice	66.8	64.5	70.9
Sugars and sweeteners	59.7	59.2	60.6
Potato	99.9	109.9	82.5
Vegetable	82.7	93.4	63.9
Fruits and berries	39.9	39.8	39.9
Pulses	0.1	0.1	0.0
Egg	9.2	12.7	3.2
Vegetable oil	21.2	18.6	25.6

Sources: Socio-economic survey of households, NSO

The results from socio-economic survey of households showed that the actual consumption of meat and meat products, milk and dairy products, flour, plant oil at rural level in winter, was higher than the national average, while urban consumption of flour products, rice, sugars and sweeteners, potato, vegetables, fruits and berries and egg was above national average during said period.

Table 7

National average of daily food intake for standard person in urban and rural areas during winter period 2015 /in grams/

Types of food products	National average	Urban	Rural
Meat and meat products	320.5	283.2	391.7
Milk	193.8	163.7	251.3
Dairy products	446.5	403.3	529.0
Flour	186.3	133.6	287.0
Flour products	190.8	237.2	102.3
All types of rice	61.6	61.8	61.2
Sugars and sweeteners	49.7	51.3	46.6
Potato	97.5	108.1	77.2
Vegetable	77.2	91.7	49.6
Fruits and berries	34.7	36.2	31.9
Pulses	0.2	0.2	0.0
Egg	8.7	12.2	1.9
Vegetable oil	20.1	17.6	24.9

Sources: Socio-economic survey of households, NSO

2. Food accessibility at household level

Household's accessibility to meat and meat products, milk and dairy products, flour, sugars and sweeteners is satisfactory, while accessibility to other foods remain unsatisfactory. The diets of people remain heavily dominated by meat and meat products, milk and flour.

Table 8

Types of food products	Daily food intake for standard person,	National average		Accessibility	
		summer	winter	summer	winter
Meat and meat products	200.0	324.0	320.5	162.0	160.3
Milk	150.0	239.6	193.8	159.7	129.2
Dairy products	200.0	561.9	446.5	281.0	223.3
Flour	100.0	183.6	186.3	183.6	186.3
Flour products	220.0	198.4	190.8	90.2	86.7
All types of rice	78.0	66.8	61.6	85.6	79.0
Sugars and sweeteners	23.0	59.7	49.7	259.6	216.1
Potato	140.0	99.9	97.5	71.4	69.6
Vegetable	200.0	82.7	77.2	41.4	38.6
Fruits and berries	180.0	39.9	34.7	22.2	19.3
Pulses	90.0	0.1	0.2	0.1	0.2
Egg	19.0	9.2	8.7	48.4	45.8
Vegetable oil	25.0	21.2	20.1	84.8	80.4

Sources: Socio-economic survey of households, NSO

THREE. DIETARY ENERGY AND NUTRIENTS

The daily intake of calories per standard person was estimated in urban and rural areas with seasonal variability. Average national intake was also calculated.

1. In summer

The national average of daily dietary calories intake per standard person in summer was 2911.4 kcal, protein 126.9 gr, fat 94.7gr, and carbohydrates 384.1 gr, which is 5.2-37.2% higher than the recommended daily calories intake value for standard person.

Table 9

Daily intake of dietary calories per standard person during summer, in urban and rural areas, and national average

	Recommended calorie intake for standard person	National average		Urban		Rural	
		2014	2015	2014	2015	2014	2015
Calorie, kcal	2500.0	2989.5	2911.4	2652.1	2544.1	3569.5	3552.4
Protein, gr	101.0	130.3	126.9	108.1	106.1	168.5	163.1
Fat, gr	69.0	94.1	94.7	77.2	77.9	123.1	124.1
Carbo-hy-drates, gr	365.0	401.7	384.1	377.4	350.7	443.5	442.2

Sources: Socio-economic survey of households, NSO

The actual daily intake of dietary energy and nutrients for standard person exceeds the reference daily intake of energy and nutrients, as revealed by survey.

However, energy and nutrients intake varies widely from urban centers to rural areas. In physiological norms, the intake of dietary calories, fat, carbohydrates and nutrients for urban population is much higher than the recommended intake value in rural areas.

2. In winter

The National average of daily dietary calories intake per standard person in winter was 2722.8 kcal, protein 121.6 gr, fat 87.1 gr and carbohydrates 359.3 gr, which is 0.5-24.4% higher than the recommended daily energy intake value for standard person.

Table 10

Daily intake of dietary calories per standard person during winter, in urban and rural areas, and national average

	Recommend-ed calorie intake for standard person	National average		Urban		Rural	
		2014	2015	2014	2015	2014	2015
Calorie, kcal	2500.0	2800.7	2722.8	2637.5	2530.6	3084.8	3089.9
Protein, gr	106.0	123.6	121.6	112.0	110.3	143.8	143.0
Fat, gr	70.0	87.5	87.1	78.3	77.5	103.5	105.5
Carbo-hy-drates, gr	358.0	376.3	359.8	367.4	344.2	391.7	389.5

Sources: Socio-economic survey of households, NSO

Intake of dietary calories, protein, fat and carbohydrates in winter season is normal among urban population, while calories, protein, fat and carbohydrates intake among rural population exceed the norms.

FOUR. INDICATORS FOR FOOD SAFETY STATISTICS

1. The level of food contamination, inspected by the accredited food testing laboratories

In 2014, total of 18.4 thousand tons and 33.3 thousand tons of food products were tested for bacterial and chemical contamination, respectively. The results revealed 0.6 thousand tons or 3.5% and 0.8 thousand tons or 2.5% of tested foods contaminated with bacteria and chemicals, respectively.

2. Confiscated, returned, removed from shelf and disposed off foods from domestic production, during the inspection

Confiscated, returned, removed from shelf and disposed off foods during inspection by GASI are shown in Table below.

Table 11

Domestic food products that were confiscated, returned, removed from shelf and disposed off

Description	Meas.unit	Volume
Confiscated foods	kg	3766.8
	liter	2911
	piece	19537
Returned foods	kg	1511.0
	piece	46250
Foods removed from shelf	kg	462.0
	liter	336
	piece	3248
Disposed off foods	kg	4088.9
	liter	1586
	piece	18527

Source: GASI

3. Number of business entities and individuals whose activities were inspected, suspended, and restored

In total, 6897 business entities, 24950 individuals were inspected by GASI, and business activities of 68 entities and 66 individuals were suspended who have been found guilty of violating the laws, standards and norms. The business activities of 49 business entities and 32 individuals were restored.

Table 12

Number of entities and individuals whose activities were inspected, suspended and restored in 2015

Description	Entities	Individuals
Inspected	6 897	24 950
Activities suspended	68	66
Activities restored	49	32

Source: GASI

4. Number of violations revealed and corrected during inspection

Total of 29.9 thousand cases of violation were identified during GASI inspection, of which 23.6 thousand violations or 79.1% were eradicated.

Table 13

Number of violations reported and eradicated

Description of violations	Number of violations reported	Number of violations eradicated
		23617
Violations of norms and standards for building and facilities	5980	4604
Violations of norms and standards for work place, equipment and machineries operation	3322	2753
Violations of technological norms and standards	2966	2373
Violations of norms and standards for hygiene and sanitary	5703	4420
Violations of norms and standards for raw material preparation, quality and safety of final food products	2951	2466
Violations of norms and standards for storage and transportation	3957	2985
Violations of norms and standards for packaging and labeling	1839	1541
Violations of rules and norms for internal control	3151	2475

Source: GASI

Violations of norms and standards for building and facilities make up 20.0% of total violations, storage and transportation 13.2%, hygiene and sanitary 19.1%, workplace, equipment and machineries 11.1%, raw material preparation, quality and safety of final products 9.9%, technology 9.9%, internal control 10.5% and violations of norms for packaging and labeling make up 6.2% of total violations reported. Violation eradication rate was 77.0-83.8%.

5. Number of accredited food testing laboratories:

As of 2015, there were 65 units of accredited food testing laboratories that're operational.

6. National, regional, foreign country's standards and technical regulations effective in Mongolia

In Mongolia, following technical regulations are effective in food sector, as of 2015.
1. Technical regulation for production of alcoholic beverages adopted by Mongolian government resolution No. 159, dated Apr 30, 2008;
2. Technical regulation for production and sales of milk and dairy products adopted by Mongolian government resolution No. 304, dated Oct 26, 2011;
3. Technical regulation for production and sales of cakes adopted by Mongolian government resolution No. 304, dated Oct 26, 2011.

Table 14

Number of food related national standards

Description	2015
Number of total standards	652
Number of national standards, that are substantially the same as international, regional and other country's standards	249
Equivalent standards	403

Source: Agency for Standardization and metrology

There are 652 national standards effective in Mongolia, of which 249 or 38.2% are substantially the same as international, regional and other country's standards, while 403 or 61.8% are equivalent standards.

7. Number of entities and food products holding Certificate of conformity

There are 302 business entities in food sector, that hold Certificate of conformity, as of 2015, which is 62 entities more or 25.8% higher than in 2014.

Table 15

Number of entities and food products types that hold Certificate of conformity

Description	No of entities	Types of food products
In total	302	215
Certificate of conformity for import products	86	36
Certificate of conformity for products from domestic production	207	165

"MNS mark" certificate	9	14

Source: Agency for Standardization and metrology

There are 215 products that hold certificate of conformity, of which 16.7% hold certificate of conformity for imports, 76.7% hold certificate of conformity for domestic products, and 6.5% holds MNS mark.

8. Number of factories introduced international quality control system

There are 14 business entities that hold MNS ISO 9001:2010 certificate for quality management standard, by the decision of internationally recognized certification body.

9. Number of factories that introduced good manufacturing practices and hazards analysis and critical control points system

There are 4 business entities, who became certified to GMP and HACCP by designated authority, in Mongolia.

Table 16

Number of factories that introduced good manufacturing practices, hazard analysis and critical control point system

Description	2015
Total number of factories	4
Factories that introduced food safety management system ISO22000 standard	3
Entities that introduced HACCP	1

Source: Agency for Standardization and metrology

10. Number of factories producing fortified foods, by production types

There are 15 factories that fortify 9.3 tons of salt with iodine, annually.

11. Number of population having secure access to safe drinking water

There are 1922.2 thousand people or 72.6% of Mongolian population have secure access to safe drinking water, as shown by the results of population and housing census 2010.

12. Alcohols and alcoholic beverages producing factories

There are 9 alcohol producing factories, 49 vodka producing, 10 wine producing and 19 beer producing factories in Mongolia.

13. Amount of alcohols and alcoholic beverages per capita

Amount of vodka, wine and beer per capita is 7.1 liter, 0.7 liter and 29.7 liter, respectively, as of 2015.

Table 17

Amount of alcoholic beverages per capita, liter

	2012	2013	2014	2015
Vodka	9.6	8.7	8.3	7.1
Wine	1.2	0.9	0.9	0.7
Beer	32.7	33.1	29.8	29.7

Source: NSO

Amount of vodka, wine and beer per adult person aged 15 and above is 10.1 liter, 1.1 liter, 42.1 liter respectively, as of 2015.

Table 18

Amount of alcoholic beverages per adult aged 15 and above, liter

	2012	2013	2014	2015
Vodka	13.5	12.2	11.9	10.1
Wine	1.7	1.2	1.2	1.1
Beer	45.9	46.6	42.4	42.1

Source: NSO

14. Number of food borne disease outbreak, number of affected, hospitalized and dead people

Food borne disease outbreak means an incident in which more than two persons experience same illness resulting from ingestion of common food.

In 2015, 6 incidents of food borne disease outbreaks were reported affecting 311 people in total, of which 33 persons or 10.6% of affected people were hospitalized. No case of mortality was reported.

Table 19

Number of food borne disease outbreaks, affected, hospitalized and dead people

Description	2012	2013	2014	2015
Outbreak of food borne illness	3	2	11	6
Number of affected people	572	24	548	311
Number of patients hospitalized	5	1	244	33
Mortality case	-	-	-	-

Source: MoH

By examining the statistics in 2012-2015, the incidents of outbreak (11) with 766 affected persons in total in 2014 have been much higher than in previous years.

Table 20

Morbidity cases related to bacterial food poisoning

Description	2012	2013	2014	2015
Number of affected people	719	238	548	482
Urban areas	633	121	235	375
Rural areas	86	117	313	107

Source: MoH