

is visible today and it is terrifying. Successful restoration of water resources can be realized only with the help of the whole set of measures.

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THE PROBLEM OF OVERPRODUCTION OF FOOD RESOURCES AND METHODS OF ITS SOLUTION

One of the global and intractable humanity issues today is hunger. 24 thousand people die and about 1 billion people starve every day in the world.

There are a lot of causes of poverty and starvation. One of them, it sounds ironically but is not a deficit, but overproduction of food.

According to the data of the UN, the world produces enough food to provide every person with 3500 calories a day, but the use of food resources is not rational in the world. Firstly, they are unevenly distributed, and secondly, there is an overproduction of products in many regions. People in the United States and Western Europe are not physically able to buy and eat the amount of food, which comes on the shelves. As a result, manufacturers, and especially suppliers are forced to dispose of unclaimed goods.

Food waste - the world's third largest source of greenhouse gas emissions that affect climate change and harm the environment.

Also, one third of all manufacturing products is wasted. Thus, 40 per cent of food products are wasted in the USA, 100 million tons of products are wasted per year, with most of them fresh and edible. According to the statistics of the researchers from Harvard University, Americans throw products for a total amount of \$ 165 billion annually. At the same time most of the countries of the "third world" are still experiencing food shortages. About 805 million people suffer from malnutrition, and that is every ninth inhabitant of the planet.

The report entitled "Problems of the global food industry" also contains data that the production of food products that do not even reach the consumer needs huge amounts of water – up to 550 billion cubic meters per year.

The problem could be solved if people spared food, but population of developed countries has no motivation to save food, as the cost of food takes less than 20 per cent of the family budget. In developing countries this percentage exceeds 60 per cent, but in the USA is less than 10%. In developing countries, the situation is different: the food often takes the first place.

In our opinion the technical solution to the problem of overproduction and spoilage of food would be the spread of biomass processing plants. Such plants are a type of alternative energy. While recycling food waste experts receive methane and fertile silt which are then used for the production of heat energy and electricity.

However, this problem can not be solved globally. Only people's decision will determine whether 40 per cent of food on the planet continues to be produced in vain.

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ASSESSMENT OF THE THREAT OF NUCLEAR TERRORISM

As the distribution on Earth of nuclear technologies and increasing the threat of their use is becoming increasingly important to protect the global community from impending nuclear disaster.

Leading world powers and international organizations are seriously engaged in the development of a set of active and preventive measures for the reduction of nuclear arsenals, non-proliferation of nuclear weapons and nuclear technology and prevent nuclear terrorism.

Nuclear terrorism is the intentions and actions of individuals or groups in possession of nuclear weapons or radioactive materials for subsequent use or threat of use, as well as attack the nuclear infrastructure in order to cause casualties, environmental damage, to achieve certain political or economic goals.

There are following targets of NT: terrorist bombs, smuggling, NPP and facilities.

First, terrorist bombs:

Designs for reliable nuclear weapons are openly available and building them repeatedly proven to be well within the capacity of competent undergraduate physics students. You can find information about design nuclear bomb in Google.

The most difficult part of constructing a nuclear weapon is obtaining the fissile material required – either highly enriched uranium (HEU, enriched to 20% or more) or plutonium (Pu). Plutonium is more radioactive, but terrorists could handle it with simple equipment such as rubber gloves and polyethylene sheeting.

Second, nuclear smuggling

There are a lot of examples of smuggling in nuclear history.

- Dec 1993, Odessa, 40 kg of uranium seized
- Dec 1994, Czech police seized 4 kg HEU, the same year German more than 400 g Pu.

- Oct 2001 Turkey 1.16 kg weapons-grade uranium in;

- Russia, stealing 22.2 kg LEU in April 2006

This is a real danger: the global stockpile of HEU and Pu currently amounts to 2300 tons, enough for more than 200,000 units of nuclear weapons. These materials exist in hundreds of buildings in more than 40 countries.

Finally, NPP and facilities

Currently 441 nuclear power plants operate in 31 countries. The most likely terrorist targets are the reactor itself and the ponds storing the spent fuel.