

emissions. But as the life shows that as more our general world economies increase as our nature lost more "valuable" natural resources such as, for instance, clean water and fresh air, beautiful wood, a lot of magnificent plants and rare animals. There is a very important and actual principles of ecodevelopment: think globally – do locally. This means that every person on the globe must think about all people in the world, about his/her children's life, future generation and does things according these thoughts.

THE PERSPECTIVES OF FORMING ECOLOGICAL GOODS MARKET IN SUMY REGION

Докл. - Будник Т., Мк-31

By forming ecological market it is possible to remove the contradictions between economic growth and preserving (improving) the quality of environment effectively. Traditionally factory and domestic waste disposal plants, low-waste, energy-saving and raw-materials-saving technology, ecologically pure foodstuffs are considered among ecological goods. But besides that there are another goods which can be considered among ecological goods, i.e. those ones which favour to minimise eco-destructive influence upon environment during their production and consumption. Let's regard some examples confirming the expediency of regional commodity producers' orientation toward ecological goods.

Ecological packing material (corrugated board). In Ukraine the rates of growth of packing corrugated board production has increased recently. From the point of view of ecology the tendency towards the development of packing corrugated board production can be explained by the possibility of its utilisation and recycling with the purpose of recovered materials reuse for production of corrugated board and toilet paper.

At present Sumy enterprise "Sumpak" (founded in 1998) produces packing corrugated board. Such packing is required by many commodity producers of Sumy, Kharkov, Poltava regions as well as of some other regions of Ukraine. Real consumers of such packing

are: distilleries (Sumy distillery), cooling plants (storehouse "Kholodilnik"), dairy factories (Sumy city dairy factory, Belopol'ye dairy factory, Romny dairy factory, Krasnopol'ye dairy factory etc.), meat-packing plants (Sumy meat-packing plant, Konotop meat-packing plant, Akhtyrka meat-packing etc.), other small and large enterprises.

Ecological wallpaper production. Taking into consideration great demand for and minimal proposal of cheap domestic products at Sumy region market there was organised the production of ecological wallpaper in Akhtyrka. Sales are accomplished within the bounds of Sumy region, mainly in Akhtyrka district. The firms specialising in construction and repair works at offices and habitable premises are the main consumers of such wallpaper. The wallpaper of such a kind are non-toxic ecologically clean manifold products: flexography printing wallpaper, washable wallpaper, self-adhesive wallpaper, wallpaper of any length, packed with respect to specific consumer's demand.

Ecological children's furniture production. Akhtyrka enterprise "Furniture" makes furniture to custom design and serial orders of private persons and enterprise Akhtyrka as well as of other cities and regions of Ukraine. The enterprise holds 60% of furniture market in Akhtyrka and Sumy region as well as 3% of Ukrainian market.

The up-to-date German equipment, progressive technology and ecologically clean materials both home-made and imported (Germany, Czech republic, Italy) are used for production of these furniture. The main consumers of this furniture are inhabitants of Akhtyrka and Sumy region. Other regions of Ukraine provide a small part of orders. Among consumers there are private persons and such organisations as kindergartens, children's camps, sanatoriums, children's homes, orphanages, schools, boarding-schools. But as a rule such organisations don't possess financial means necessary to buy new furniture. That's why real consumers are only those ones, which function on self-financing basis, or those ones, which have sponsors, or private pre-schools and schools.

Equipment for food and processing industries producing ecologically clean foodstuffs. Akhtyrka JSK "Nefteprommash" produces filling-and-capping machines for bottling all the kinds of

liquid (lemonade, mineral water, juice etc.) in glass bottles (0,25-1 litre) and corking with metal corks as well as for bottling liquid in plastic bottles (1-2 litres).

Sales are accomplished within the bounds of Ukraine. Main consumers are agricultural firms, food industry, and private firms. Entering the CIS countries market is troubled because of strong competition.

At present approximate needs of Ukrainian consumers for filling-and-capping machines equal (items): agricultural firms - 95, food industries - 175, private firms producing drinks - 630, farms - 100.

Gas-meters setting. The problem of gas consumption calculation in private life has appeared after Ukraine had become independent and Russia had claimed to settle accounts for gas consumed. As gas becomes more and more expensive suppliers' and consumers' demand for gas-meters will increase.

The main consumers of gas-meters are gas service and municipal communications service, construction organisations, owners of flats and houses. According to official data annual construction organisations' output is equal to 250 thousand flats equipped with gas-meters.

Gas service and municipal communications service buy about 195 thousand gas-meters per year. The poll made allows to find that approximately 311 thousand owners of flats and houses install gas-meters by their own initiative. Thus the total size of Ukrainian market of gas-meters accounts for 756 thousand items per year. The size of Sumy region market is approximately 50 times smaller.

The list of examples may be continued and all of them show the expediency of regional commodity producers' orientation toward ecological goods, which are economically effective in sphere of production as well as in sphere of consumption and ecologically safe from the point of view of destructive influence upon the environment. And still as follows from all the above mentioned such products are new for the market, i.e. they may be regarded as innovations.

As a conclusion it is necessary to underline that forming ecological innovations market will help to solve economic, social and ecological problems, and assist in Sumy region's and Ukraine's economy

transition toward ecologically sustainable socio-economic development creating conditions for entering society of civilized countries at the equality basis.

CODING THEORY

Докл. - Мельник Ю., ИИ-31

1. People all over the world have been fascinated by the pictures and scientific data being relayed from Mars by NASA's Pathfinder mission. For decades space probes have been sending back similar data from the furthest planets. How can this information be reliably transmitted across hundreds of millions of miles without being completely swamped by noise?

2. Many different disciplines come together to successfully recover these signals - electronic engineering, computing and mathematics. *Coding theory* is the branch of mathematics concerned with transmitting data across noisy channels and recovering the message.

3. The simplest method for detecting errors in binary data is the *parity* code which transmits an extra "parity" bit after every 7 bits from the source message. However, this method can only detect errors, the only way to correct them is to ask for the data to be transmitted again!

4. The disadvantage of the repetition scheme is that it multiplies the number of bits transmitted by a factor which may prove unacceptably high. In 1948, Claude Shannon, working at Bell Laboratories in the USA, inaugurated the whole subject of coding theory by showing that it was possible to encode messages in such a way that the number of extra bits transmitted was as small as possible.

5. It was two years later that Richard Hamming, also at Bell Labs, began studying explicit error-correcting codes with information transmission rates more efficient than simple repetition. It is said that Hamming invented his code after several attempts to punch out a message on paper tape using the parity code. "If it can *detect* the error," he complained, "why can't it *correct* it!".

6. While Shannon and Hamming were working on information transmission in the States, John Leech invented similar codes while