

THE YEAR OF 2001
“CASE STUDY FOR CLEAN DEVELOPMENT MACHANISM”

**A FEASIBILITY STUDY
OF
ORGANIC WASTE (BIOMASS)
RECYCLE BUSINESS
BY
LIVESTOCK WASTE
IN UKRAINE**

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NON PROFIT ORGANISATION
“JAPAN PFI ASSOCIATION”

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Treatment of the livestock and poultry waste is one of the most serious problems in Japan and almost in the leading industrialized nations.

Japan has a practice of chemical treatment of the organic waste known as GM (“Green Mighty”) System™ which can avoid shortcomings of either Biogas plant (Methane fermentation recycle system) or Compost system.

In the process of Biogas plant or Compost system most part of GHG generated of organic waste is discharged into the atmosphere, while GM System™ can firmly fix all CO₂ gas to the mixture of organic matters and lime (sub product of GM System™), then to be transformed to humus soil. In such way GM System™ contributes to reduction of GHG.

It is also well known that the mixture of organic matters and lime produced by GM System™ goes long way toward recovery of fertility of soil in arable land and pasture. GM System™ treats organic waste in large quantities in the shortest time by the simplest equipment which can be manufactured in any industrialized country.

That is why Ukraine was chosen by us for the case study of application of GM System™ to recycle business of livestock and poultry waste as main raw material of organic waste.

Ukraine, a big nation of the former USSR, has long been suffering from extended recession of national economy after the collapse of the USSR. There are no remarkable indications of recovery of Ukrainian economy at the moment. Agriculture and livestock industries have shrunk by half in production basis. Nevertheless there are the almost same numbers of livestock and poultry holdings as in Japan.

During our twice fact-finding tours in Ukraine it was confirmed that most livestock and poultry in Ukraine are kept freely in pasture or ponds except the coldest season of year, though pigs and domestic fowls are principally kept in sheds, while most Japanese stock farmers run intensive breeding in sheds which causes daily problems of the

treatment of livestock and poultry waste.

Tendencies of Livestock and Poultry Holdings in Ukraine

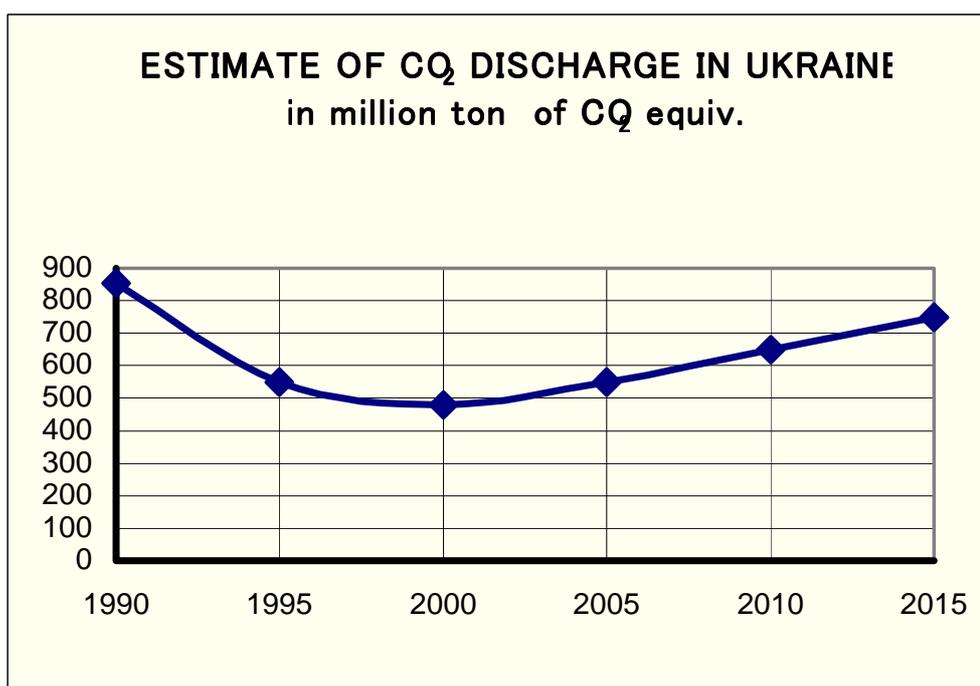
in thousand heads as of 1st Jan. of the year

	1991	1999	2000	2001	
Cattle	24,623.4	11,721.6	10,626.5	9,219.6	* 37.43%
Including cow	8,378.2	5,840.8	5,543.0	4,904.3	59.24%
Pig	19,426.9	10,083.4	10,072.9	7,928.5	40.81%
Sheep, goat	8,418.7	2,206.0	1,884.7	1,766.5	20.98%
Horse	734.4	721.3	698.1	698.1	88.30%
Poultry (in million)	246.1	129.5	126.0	123.0	49.98%

* ratio to 1991

In Ukraine most of organic waste (excrement and urine) of livestock and poultry are thrown around the sheds, dumped into rivers or partly used being composted. Production of GHG from the livestock and poultry waste is found to be ignorable in Ukraine.

The main sources of GHG in Ukraine are energy sector and exhaust gases of automobiles, though they have been also constantly decreased from 1990 because of stagnation of social and economical activities in Ukraine shown as below.



In this meaning Ukraine has big deposit in CO₂ transactions.

Ukrainian Government has been enacting and improving environment legislation, coordinating with EU regulations, aiming for the entrance into EU membership. There are relevant Government offices concerned for environmental policies in Ukraine such as the Ministry of Environment and Natural Resources (MENR) and the Inter-ministerial Commission for coordination with COP. Ukrainian Government is keen to JI mechanism and practices with Japan. International cooperation of Ukrainian Government has been mainly conducted with European nations which have been donating grants for introduction of the advanced environment aware technology into Ukraine such as wind power stations, biogas plant etc.

Ukrainian Government expressed keen interests to our project of introduction of GM System™ to recycle business of organic waste in agriculture and stock breeding industry in Ukraine. MENR recommended us Ukrainian Scientific and Research Institute of Ecological Problems (USRIEP) as our counterpart. USRIEP was founded in 1971 as All-Union Status research institute of the former USSR. USRIEP has the most experienced specialists of environmental issues all over the former USSR countries.



USRIEP selected as the survey site Agricultural Company “Orikhovatka” in Novo-Vodolaga district of Kharkov region, Ukraine. The Company has 3000ha of cultivated land and 400ha of forest in the average conditions of climate, soil and other natural conditions in Ukraine. AC “Orikhovatka” produces grain, potatoes etc. and breeds

cow, cattle (500 in all), poultry (27000 in all). AC “Orikhovatka” is famous in Ukraine for successful management and is strongly interested in introduction of GM System™ in use of not only livestock waste, but also straw, peat which is recovered there in large quantity. The Company will use sub product of GM System™ (the mixture of organic

matters and lime) in their own land and sell it to other managements in neighbourhood. Quicklime to be used as one of the raw material for the process of GM System™ can be easily obtained in the district. USPIEP analyzed the samples of livestock and poultry waste in the territory of AC “Orikhovatka” and confirmed that GM System™ was applicable in local conditions on the basis of laboratory tests.

In case of introduction of GM System™ to AC “Orikhovatka” USRIEP will take all measures of support to implement the project and Local Government of Kharkov region also offers all possible assistance at administration side.

If GM System™ will be approved applicable and beneficial in our case of AC “Orikhovatka”, it can be applied in neighbouring countries such as south Russia, south Belarus, Poland, Hungary, Slovakia, Romania and Moldova which are in similar climatic and geographic conditions.

There are 12-15 nation wide NGOs with environmental orientation in Ukraine which are keen to any ecology aware projects. Probably only agriculture and stock breeding sectors are out of their sight.

These NGOs are also interested in resolution of huge volume of abandoned and accumulated sludge of urban sewage. Ukrainian Government and USRIEP expressed intention to apply GM System™ for resolution of this problem. Our consideration is that reconstruction of sewage disposal plants (major 26 cities in Ukraine) by to date technology is the first thing to do.

Grant and technical assistance of Japanese Government for implementation of the project of GM System™ in Ukrainian agriculture and stock breeding industry will be highly appreciated by Ukrainian Government, local livestock breeders and agricultural enterprises. It will contribute to revival of Ukrainian agriculture and stock breeding industry with tangible results.