

**ENVIRONMENTAL ASSESSMENT
NEW HOLLAND TRAINING PROGRAM
UKRAINE**

Under the auspices of

Citizens Network for Foreign Affairs, Kiev, Ukraine

and the

United States Agency for International Development

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Agribusiness Partnerships II Project

by

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(1) SUMMARY

The objective of this Environmental Assessment is to bring New Holland operations at their farm machinery center in Mykolaiv, Ukraine into compliance with environmental regulations of Ukraine and pertinent regulations of the United States Agency for International Development, 22 CFR Regulation 216. The EA is based on the Initial Environmental Examination, various CNFA/USAID reports and memorandums, on local authorities inspections and site visits made by CNFA personnel. Several interviews and discussions with New Holland personnel have occurred regarding the Environmental Assessment. The training program of New Holland is considered to be resulting in a positive environmental impact compared to previous conditions. All licences for operation are in order.

1.1 Mitigations Recommended and Progress toward Achieving them

- 1) An adequate waste management plan for correct disposal of fuel, engine transmission, oils, lubricants, and fluids will be written and adhered to during the project.
- 2) Environmentally safe fuel, oil and lubricant storage must be constructed for the main Training Center and an environmentally safe scheme for fuel use during custom farming operation. The current storage consists of a steel railroad box car painted in a white color containing 55 gallon lubricant drums. In addition there are three large surface tanks for fuel storage (photo album). These storage facilities should be protected by earthen berm constructed around them sufficient to contain spillage of at least one-third of the total storage capacity. New Holland reports that "The fuel station and external lubricants' store will be done in accordance with the existing environmental and safety Sate Standards upon the Service/Training Center completion";
- 3) Sufficient ventilation caused by engine exhausts during repair must be provided
- 4) Correct effluent capture stuctures for motor and machine washing must be constructed and a waste water and sewerage plan needs to be implemented
- 5) Measures to mitigate noise from farm machinery must be elaborated;
- 6) Fire fighting equipment (extinguishers, sand, shovels) must be in place;
- 6) Permits and instructions for fire control that comprise emergency preparedness plan must be issued according to Ukrainian laws;
- 7) An Emergency Preparedness Plan including a worker safety plan must be written and elaborated;
- 8) Training should comprise the following:

- ▶ A company Health and Safety section in workshop practice and equipment operation;
- ▶ correct use of spraying equipment;
- ▶ proper dismantling of equipment;
- ▶ disposal of waste products such as oils, old filters, etc.;
- ▶ exhaust emission control;
- ▶ safe disposal of serviceable parts and major components.

All ecological and health passports must be examined for compliance;

1.2 Monitoring and Evaluation

Regulation 216 of 22CFR requires that monitoring be completed on those projects where a significant negative environmental impact is foreseen (216.3)(a)(8). Following dialogue with USAID, the following monitoring plan is to be followed by New Holland.

- **Frequency of mitigation efforts or potential impacts.**

Response: New Holland is required to report quarterly to CNFA as to the state of the progress in attaining all mitigations listed in this Environmental Assessment. Once mitigations are in place, no further mention of that particular mitigation is required unless new unforeseen events occur. At the end of the project, New Holland will certify in writing that mitigations were completed, and a full justification for failure to mitigate will be forwarded to CNFA and USAID why mitigations were not completed.

- **Who is responsible for doing specific kinds of monitoring.**

Response: The contracting parties of New Holland are responsible for monitoring. CNFA Environmental Office will review progress including periodic visits to the sites of project activities. CNFA will track progress and report quarterly to USAID.

- **Source of monitoring information. and contribution to a regional, national or other monitoring effort.**

Response: Sources of monitoring will come from official government passport licenses, New Holland staff observations, and periodic site visits by CNFA personnel. In the case of water monitoring, should it be necessary. CNFA will arrange for this process. CNFA is willing to share monitoring information with interested parties with permission from New Holland. Some information

is public domain such as rare and endangered species lists which are planned to be distributed to Oblast officials by the end of the AP-2 project.

(2) PURPOSE

The majority of the Ukrainian farm machinery fleet is outdated by as much as 50 years and is incapable of meeting the needs of modern agriculture. New Holland intends to respond to these needs by introducing state-of-the-art equipment. However, modern equipment in Ukraine cannot be operated successfully without an appropriate service network and a training program must be an integral part of it. The core business activity is to create a service network covering the whole Ukraine with a permanent main service training center in Mykolaiv.

The development activity in this project is designed to provide comprehensive training to cover training of repair technicians, product knowledge at the dealership level, operator and maintenance skills for the persons in the field operating the machines, parts management and inventory control, dealer business management, on-farm user maintenance, etc. In Ukraine, training must have priority due to lack of knowledge and experience about Western approaches. Training, currently being implemented and planned for the future, includes the following:

- 1). Operators - how to operate, adjust and maintain each item of field machinery;
- 2). Agronomists - the capabilities and application of these machines
- 3). Technicians - how proper repair and service equipment achieve long service life,
- 4). Dealership staff - how to manage customer relations;
- 5). Sales staff - product knowledge and marketing techniques;
- 6). Managers - how to operate a workshop on a commercial basis;
- 7) Dealer staff - how to manage inventories of spare parts and complete machines;
- 8) No-Till and Minimum-Till management and field operations

In 1997, New Holland set up a central spare parts distribution store in Bila Tserkva to meet customer demands and provide time for dealers to develop their own stores. Two additional spare parts stores were developed in Mykolaiv and Poltava. The main Training Center in Mykolaiv comprises space for the shop and "hands-on" portion of the facility. The shop area will include bays for tractors and combines, center drive areas, tool stores, oil stores, and compressor. The classroom/office will have lecture rooms, a small auditorium, an open place office area, a manager's office, toilets and

wash rooms, a small lounge with refreshment facilities, and a literature room.

At the outset the program will include:

- 1). Marketing techniques and practice;
- 2). Demonstration and installation;
- 3). General business management;
- 4). Dealership management;
- 5). Management of a service workshop;
- 6). Maintenance and repair techniques;
- 7). Warranty procedures and administration;
- 8). Spare parts and parts management;
- 9). Dealing with customers;
- 10). Parts merchandising;
- 11). On-farm maintenance;
- 12). The capabilities of modern equipment;
- 13). On-farm equipment operations.

The expectations of this project include long term effects of training for those completing the training classes, improvement of farms and farming methods, and future business opportunities. Generally speaking, the Service/Training Center will be made based on the advanced design and environmental and safety standards and requirements including proper disposal of used liquids, fire protection, ventilation, labor safety etc. In detail, the Mikolaev Center will include all necessary working areas including: battery, electrical, electronics, hydraulic, hydrostatic, fuel system, mechanical, and overhauling depots, all provided with modern tools and equipment. The second New Holland step in Ukraine is to continue to develop the Poltava Center to satisfy the demands of the central part of Ukraine. The Poltava Center will be done in accordance with the modern standards and requirements.

(3) THE SETTING

Due to temperate climate and chernozem soils, Ukraine has the potential to produce substantial yields of high quality crops. However, the lack of reform, collective farm

systems, fiscal policy and unsustainable techniques have brought the agricultural sector to a deep depression. Over the past five years, agricultural production levels have declined to the point where wheat production is 33% lower than its peak. Sugar beet yields have declined by 76 % and soy beans by 89% from their former level. Government subsidies that sustained the agriculture in former times are not now available.

Since independence, links between farmers and farm machinery suppliers have been disrupted by the economic situation. This has caused a severe shortage of machinery and spare parts. In 1996 Ukraine had an inventory of 86,000 harvesters and 440,000 tractors. However, the number of actual functioning machines is much lower. Under normal conditions, between six and eight thousand combines and 60-65,000 tractors would be replaced each year, but because of the economic situation , replacements are running at less than 10% of that level. It is estimated that 75%, or 330,000 of all the tractors in Ukraine need to be replaced at this time.

There are several ways in which training of the efficient use of farm machinery has a direct bearing on the environment. Machinery which is correctly operated and maintained has a much lower fuel consumption than poorly operated and insufficiently maintained equipment. Since the price of energy affects the cost of other inputs, rising prices have had the effect of educating users in the efficient use of all input materials. This has only recently impacted Ukraine, which has much to learn about conserving materials.

Well maintained and operated modern farm machinery consumes fuel at one half the rate of outdated existing equipment which is poorly designed, maintained and operated. Effective use of seeds, fertilizers and agrochemicals all conserve raw materials and energy in the manufacturing process and even more fuel in distribution.

The correct methods for disposal of engine and transmission oils will be covered by equipment maintenance training courses. This addresses a significant problem on Ukrainian farms where used lubricants are regularly “dumped” in an irresponsible manner. All waste generated by the training process itself will be disposed of in an environmentally safe manner.

No-till and minimum till farming practices cannot be done with anything but modern machinery. These techniques dramatically reduce the total amount of agricultural inputs to produce the same crop. With this reduction comes less fuel burned, less top soil lost, less silted runoff, and less time spent; all important to the care of the environment. Modern machinery cannot reach its full potential without proper training.

Providing efficient modern machinery and trained staff able to utilize it to its best advantage brings a range of benefits to the environment including;

- ▶ Reduction of fuel use - modern equipment and minimum cultivation techniques can reduce fuel usage by more than 50%.

- ▶ Reduction of machinery wear - efficient cultivation operations reduce the wear of machinery and so prolong its life. This reduces the quantity of soil engaging parts, tires and track components which need to be manufactured and distributed.
- ▶ Effective cultivation practices produce a crumbly tilth which is less suitable for weed growth, this enables the use of pesticides to be reduced by as much as 30%
- ▶ Correct choice of crop sprayer nozzles can reduce pesticide application rates by as much as 40%.
- ▶ Minimum cultivation techniques reduce the number of passes over the soil, this reduces soil compaction and damage, promotes free drainage and root development and can increase cropping by 25%.
- ▶ Minimum-Till or No-Till crop establishment techniques prevent the “dusty” soil conditions favored by traditional Soviet agronomists and so reduce topsoil losses due to water and erosion by strong winds. This improves sustainable agricultural operations.
- ▶ Simple methods such as contour ploughing are rarely practiced in Ukraine
- ▶ Advanced New Holland technology includes yield mapping techniques which reduces costs of field operations and the quantity of inputs used, including fertilizers and agrochemicals.
- ▶ New Holland training encompasses good environmental practice including safe disposal of used lubricants and other harmful materials and general safe working practices.
- ▶ The provision of efficient field machinery in the correct time frame and its maintenance can improve crop yields by more than 25%. This makes more effective use of all of the inputs required including machinery, fuel, fertilizers, chemicals and spare parts, thus providing environmental benefits.

A no action alternative for this project would hinder the opportunity of resuscitation of the Ukrainian agriculture. The promotion and adoption of effective and environmentally sound machinery and appropriate farming techniques, plus the training of farmers as being developed by New Holland is a preferred alternative.

(4) AFFECTED ENVIRONMENT

4.1 Description of the Environment

The main Training Center is located near Mykolaiv, a large cargo port and an Oblast Capital situated at the outfall of Southern Bug River flowing into the Black Sea. It is a typical rural area surrounded by fields and warehouses. The site is located in Ternivka village approximately 1 km south of the city (see map, appendix C). The enterprise is a former state service machinery center which is now owned by Ukragrobusiness. As of 06/05/98, the center housed twenty two US built New Holland combines (TR 88 twin rotors) and all are equipped with changeable heads for each crop and kind of work. Also in the depot are various New Holland tractors, balers and mowers. The center

mostly deals with harvesting service. The harvesting season starts in early July, combines begin harvesting in THE southern the oblasts and as the grain ripens the work shifts to in central and northern Ukraine. This practice includes wheat, sunflower and corn. A storage area exists to receive 800 types of New Holland spare parts.

The city has approximately 500,000 people. The population of the Oblast is 1.3 million people. The Oblast is in southern Ukraine with an economy diversified in industry and agriculture. Industry is the leading force in the economic structure with shipbuilding, color metallurgy, machine and metal working, light and food industries. The unemployment rate is very high, as in all of Ukraine. Agriculture is specialized in milk and meat production and growing grain, beets, sun-flowers and vegetables. The density of the population varies from 50 - 200 people per square km.

The climate is typically moderate continental, characterized by mild, mainly snowless winters (mean temperatures for January between -4°C and -5°C) and hot arid summer (mean temperature for July is 22°C), Maximum summer temperatures in July can reach highs of $+39^{\circ}\text{C}$ with January lows of -30°C . Precipitation ranges between 300 ml and 475 ml annually most of which falls as rainfall in summer. Dust winds and droughts are significant disadvantages in the generally favorable climate conditions.

The surface of the region is flat, inclined to the south and broken by meandering river basins. Deposits of construction materials such as granite, gneiss, gypsum, and limestone exist, and brown coal and peat are of significant importance. The soils tend to be chernozems and southern chestnut and dark chestnut. Irrigation is used in some districts. For the most part, the land is devoted purely to agriculture.

According to the official Ukrainian data, the Oblast air, water and soils are contaminated, with pesticide pollution common.

4.2 Biological Environment

The native steppe vegetation (mixed herbs, sheep fescue, feather grass and forests along the river basins) has almost been completely replaced by agriculture. A partial list includes the following species:

4.2.1 Vegetation

Grasses and flowers

Sheep fescue, Lessing feather grass, steppe sedge, bluegrass, Ukrainian feather grass, yellow alfalfa, vetch, flowering rushes, lake reeds, tulips, motley irises, absinth, cow's lungwort (bear's ear), Russian thistle, goat's beard, carnations, blue wheat grass, goldilocks, steppe camomile, foxtail, sea lavender, alcaria, branching larkspur, meadow Saxifraga.

Shrubs and trees

Wild almond, steppe acacia, tick seed, Summer cypress

Endangered (E) or rare (R) species

Hairy feather grass, *Stipa capillata* (E), Dnipr feather grass, *S. borysthonica* (E), Ukraine lyesinga, *S. ukrainica* (E), lyesinga, *S. lessingiana* (E), and Jersey orchis, *Orchis palustris* (R).

4.2.2 Animals

Mammals

Extinct

Aurochs, wild ass, tarpan (wild horses), saigaks, Red deer, steppe marmots (reintroduced in 1934 and more recently).

Surviving today

Fox, pole-cat, marten, coon dog, hares, jerboas, hamsters, gophers, musk rat, and field mouse.

Birds (16 species)

Larks (steppe, short-toes, thick-billed, horned), quail, white tailed eagles, big cormorant, herons (big and white, small, yellow), Mute swan, gray goose, gray duck, coot, water hen, black kite, partridge, and whiskered tit.

Reptiles and Amphibians

Marsh turtle and water snake

Endangered (E) or rare (R) species

Steppe Eagle, *Aquila rapax* (E), white-tailed sea eagle, *Haliaeetus albicilla* (E), great bustard, *Otis tarda* (E), black winged stilt, *Himantopus himantopus* (R), four-striped rat snake, *Elaphe quaatvorlineata* (R), steppe viper, *Vipera ursini renardi* (E), greater noctule, *Nyctalus lasiopterus* Schreber (R), lesser noctule, *N. leiserli* (R), steppe ferret, *Mustella evesmanni* (R), and sand mole-rat, *Spalaax arenarius* (R).

(5) Waste Management

Estimated quantity of fuel and oils to be used for the training amounts to several hundreds of liters per annum. A plan has been elaborated in conjunction with the local environmental authorities.

Correct drainage and washing for motors and machinery will be constructed. Correct evacuation of exhaust fumes is required.

(6) ENVIRONMENTAL CONSEQUENCES

The issue of fuel and lubricants management is the primary concern of this EA.

6.1 Public Health and Safety

Public safety and health are of importance in this project because of possible contamination of the field and ground water due to spillage of fuel, oils, solvents from engines, crankcases and transmissions from farm machinery. The issues will be covered under the Emergency Preparedness Plan.

6.2 Fuel Use and Fire Control

Fuel, engine, transmission and gear case oils, hydraulic fluids can contaminate the fields and the Centers by spillage. The storage facility for fuel, a railroad box car is sufficiently safeguarded. In order to contain spills it needs an earth berm. This berm should be of sufficient height to contain the entire fuel load.

Overall, the organization of the system of fire prevention measures in Ukraine is as follows:

1. Every business, industry, factory, etc. must have a specific fire precautions plan based on state regulations that includes the quantity and quality of substances that may cause fires. Also included should be a plan of action in case of fire, evacuations, the appropriate number and location of pertinent fire extinguishers, etc. All employees must have access to this plan;
2. Every factory, industry, etc. must appoint one employee, usually a safety engineer, who is in charge of fire-prevention measures. At the same time, every facility must appoint one person in charge of fire prevention;
3. Every employee must be trained before he begins work in the use of the rules for fire prevention and how to take appropriate action in order to extinguish fires; every employee is obliged to pass the exam on fire prevention measures at the facility on a yearly basis;
4. State inspectors regularly visit the facility, checking the implementation of fire-prevention measures.

6.3 Quality and Quantity of Air Emissions

Air emissions arise from the transfer of fuel to farm machinery and during operation of its motors. Most emissions from the machinery occur early in the morning during start up, testing and warm up of engines. These emissions are not abnormal and should not cause significant negative impacts.

6.4 Potential Noise Levels From the Facility

Noise emissions are similar to air emissions at the farm service center, and are not abnormal for this agricultural zone. Machinery operating indoors during testing and repairs must be attached to exhaust ventilators.

6.5 Impact of the Project on Water Supplies

In general, the project impact on water supplies is significantly positive, since new no-till techniques imply millions of topsoil saved and conserving substantial amounts of soil water, thus increasing crop growth. The nearest water source 10 km to the site is Southern Bug River. Sufficient precautions described in this environmental Assessment regarding spent fuel and lubricant disposal and washates will prevent water contamination

6.6 Effects on Aesthetics and Visual Quality

No adverse impacts will occur.

(7) LIST OF PREPARERS

Dr. Wayne T. Williams is currently the Environmental Officer for Citizens Network for Foreign Affairs projects in Kiev, Ukraine. He has extensive experience in the Environmental Assessment field, successfully completing several dozen Environmental Assessments for USAID in Central America from 1991 through 1995 in his capacity as Regional Environmental Advisor for USAID/ROCAP in Guatemala. These and other Environmental Assessments completed by Dr. Williams covered the widest possible range of topics including dairies, canning plants, slaughter houses, chemical warehouses, medical clinics construction, solid and liquid waste disposal, public health and other projects including large and medium sized industrial operations, including electrical power generating plants. .

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(8) APPENDICES

- A. IEE
- B. Photo Album
- C. Maps of Region
- D. Company Health and Safety Policy.