

ROMANIA

AGRICULTURAL POLLUTION CONTROL PROJECT

WORKING PAPER 16

**OPERATIONAL MANUAL FOR
MANURE MANAGEMENT SYSTEM**

Project Preparation Unit
Calarasi

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Table of Contents

- I. PROJECT BACKGROUND
 - A. Objectives and Context
 - B. Geographic Coverage
 - C. Project Actions
 - D. Organizational Structure
 - E. Public Awareness

- II. MANURE MANAGEMENT SYSTEM ACTIVITIES AND INVESTMENT PROGRAM
 - A. Manure Management System
 - B. Selection of Participating Comuna/villages and Households
 - C. Implementation Responsibilities and Procedures
 - D. Procurement Procedures
 - E. Larger Livestock Units
 - F. Training Program

- III. MONITORING AND EVALUATION
 - A. Evaluation of the Results of the Manure Management System
 - B. Environmental Monitoring
 - C. Social and Economic Assessments
 - D. Replication Strategy

Annexes:

- Annex 1: Application/Selection Proforma for Comuna
- Annex 2: Preliminary Agreement between PMU and Comuna
- Annex 3: Household Application for Supply of Materials for Household Manure Pad
- Annex 4: Grant Agreement between PMU and Comuna
- Annex 5: Co-financing Agreement between PMU and County Council
- Annex 6: Application for Farmer Associations or Individual Farmers with Large Livestock Units
- Annex 7: Grant Agreement between PMU and Farmer Associations or Individual Farmers with Large Livestock Units
- Annex 8: Certificate confirming satisfactory completion of works

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I. Project Background

A. Objectives and Context

Overall Development Objective. The Ministry of Environment with the support of the Global Environment Facility has established the Agricultural Pollution Control Project in the Calarasi Judet with the objective of increasing significantly the use of environment-friendly agricultural practices in the project area and thereby reduce pollution from agricultural sources in Romania to the Danube River and Black Sea.

In support of this objective, the project will assist the Government of Romania to: (i) promote the adoption of environment-friendly agricultural practices (including improved manure management system) by farmers' associations, family farms and individual farmers in the Calarasi Judet (county); (ii) promote ecologically sustainable land use in the Boianu-Sticleanu Polder, including an ecological management plan for the Iezer Calarasi water body, and ecological restoration of the Calarasi-Raul Polder, to act as a filter and reduce the nutrient discharge to the Danube; (iii) strengthen national policy and regulatory capacity; and (iv) promote public awareness at local, national and regional levels and mechanisms for replicability.

National & Regional Context. The global environmental objective of the Project is to reduce, over the long-term, the discharge of nutrients (nitrogen and phosphorous) and other agricultural pollutants into the Danube River and Black Sea through integrated management of the Calarasi region, by combining better on-farm environmental management and ecological rehabilitation of two agricultural polders. These activities are directly linked to "Strategic Action Plan for the Protection and Rehabilitation of the Black Sea" (BSSAP), formulated with the assistance of the Global Environment Facility (GEF). BSSAP has identified nutrient discharge from agricultural sources as the most serious problem facing the Black Sea.

The Project would also complement the Danube River Pollution Reduction Program and assist the Government in meeting its international obligations under the Bucharest Convention for the Protection of Black Sea from Pollution, signed in April 1992 by all six coastal countries and enforced regionally in April 1994. In addition, the Odessa Ministerial Declaration on the Protection of the Black Sea was signed in 1993 by Ministers of Environment from all six Black Sea coastal countries to adopt a series of actions which would collectively support the rehabilitation and protection of the Black Sea. The improved farming practices envisaged by the project will result in, inter alia, a decrease in methane emissions from farmyard manure.

B. Geographic Coverage

Project area: The project will be located in Calarasi Judet. Initially, it will focus primarily on seven comunas¹ located around Lake Galatui, where the current manure handling practices have the potentially greatest negative impact, and where the beneficial impact of an improved system can be readily monitored. In addition, the project will leverage resources from the Competitive Grant Scheme funded under the Agricultural Support Services Project, for technology adaptation and extension work on environment-friendly practices and sustainable agriculture in the whole Calarasi Judet. With regard to creating public awareness of agriculture-related environment issues, the project will support activities in the Calarasi Judet, at the National level and in Black Sea Coastal Countries. The project, envisaged as a pilot activity in the Calarasi county in the southern part of Romania, along the lower Danube reach, may be replicated in similar sites in Romania which will, in the long term, reduce the discharge of nutrients and yield substantial benefits in terms of improved quality of Romanian surface and ground waters and the Black Sea.

*Population and Agriculture*²: There are 21 villages in the seven comunas with a total population of about 26,657 in 10,540 households. The farm households are organised into a total of some 88 groups comprising a variety of commercial societies (34) as well as agricultural or farm associations (25) and family associations (29). The distribution of agricultural land and households by type of organization is as follows:

Organisation Type	Number	Farming Entities ³		Agricultural Land	
		Number	Percentage	Hectares	Percentage
Commercial Societies	28	2699	24%	9096	13%
State Farms ⁴	6	0	-	21,490	31%
Agricultural Associations	25	6093	54%	23,056	34%
Family Associations	29	468	4%	2345	3%
Individuals	-	2075	18%	9294	14%
Land run by comunas	-	0	-	3730	5%
Total	88	11335	100%	69,011	100%

Some 58% of the farming families farm 37% of the land in agricultural or family associations, while 18% of households farming as individuals occupy 14% of the land. The Polder area comprises 31% of the agricultural area. Previously run by three state farms, this land is in the process of being leased out to private, commercial companies. Some 3730 ha, much of it in the Polder, are maintained in pastures operated on a communal basis for the adjacent comuna population.

The major crops are wheat, barley, maize and sunflower, with soja also an important crop in the Polder. The area in forage crops and grassland is relatively small. Some vegetables and watermelon are also grown, but the area is limited by the inadequacies of the irrigation system that has been partly disabled due to pilfering of equipment.

¹ Al Odobescu, Ciocanesti, Cuza Voda, Gradistea, Independenta, Vilcelele, and Vlad Tepes

² Figures do not include the Calarasi-Raul Polder area.

³ Information of membership of different farming organizations came from comuna mayors. Total (11,335) is slightly in excess of number of recorded families (11,112).

⁴ In process of being leased out to private companies.

Some 60% of the households are said to own livestock kept at the homestead. The majority of the cattle and pigs are kept in this way with less than 10% of cattle and 2% of pigs held in larger units. Numbers of livestock owned by households by comuna are shown below:

Comuna	Cattle	Pigs	Sheep and Goats	Horses	Poultry
Al. Odobescu	646	1,725	3,644	587	23,006
Ciocanesti	955	5,993	9,224	294	52,469
Cuza Voda	1,067	1,408	4,005	341	29,240
Gradistea	1,820	6,336	3,468	637	48,700
Independenta	1,232	2,695	865	328	34,780
Vilcelele	457	2,264	2,331	350	68,108
Vlad Tepes	452	1,736	2,018	390	27,000
Total Stock	6,629	22,157	25,555	2,927	283,303

Stock on large farms estimated at about 500 cattle (dairy cows) and 300 – 500 pigs (breeding sows) in small number of relatively large units. However, with only one or two large farms in each comuna, these units represent major concentrations of stock and a risk of point-source pollution. This risk is further increased by the poor state of the existing slurry and solid waste systems. The larger units are primarily in Independenta (large dairy) Vilcelele (breeding sows) and Cuza Voda (sheep).

C. Project Actions

The project will support activities under four components to be implemented over five years as follows:

- (i) In the **Calarasi Judet**, the project will support activities at two levels: first at the Judet level, where funds from the ASSP Competitive Grant Scheme will be leveraged; second, in seven comunas around Lake Galatui. The respective project areas and activities will be as follows:
 - (a) All forty-eight comunas of the Calarasi Judet comprising about 410,000 ha of arable land and a total population of 332,000 in 94,000 households. The APCP will provide support for Competitive Grant Scheme technology adaptation and extension interventions on environment-friendly practices, thereby leveraging additional funds from the ASSP for the Calarasi Judet.
 - (b) Seven comunas⁵ comprising about 90,000 ha with 70,000 ha of arable land. Total rural population is 26,700 in 10,540 households. The southern part of this area borders the lower Danube and includes the Boianu-Sticleanu Polder (approximately 23,000 ha). Formerly a floodplain area, it has been drained and transformed into an agricultural polder in the sixties and now contains large areas of cultivated land, small areas of floodplain forests, degraded lands and the Iezer Calarasi water body. The Calarasi-Raul Polder (total area of about 15,000 ha of which 3000 ha has been cultivated for rice) adjoins the Boianu-Sticleanu Polder to the east. The project will provide for investments in the following activities in the seven comunas:
 - the provision of grants on a cost-sharing basis for the installation of improved manure storage facilities and equipment for manure collection and application;

⁵ Al Odobescu, Ciocanesti, Cuza Voda, Gradistea, Independenta, Vilcelele, and Vlad Tepes

- the testing and demonstration of environment-friendly agricultural practices;
 - the promotion of ecologically sustainable land use in the Boianu-Sticleanu Polder, including a conservation management plan for the Iezer Calarasi water body, as well as an intervention in the Calarasi-Raul Polder; and
 - the strengthening of capacity in Calarasi Judet for monitoring soil and water quality and environmental requirements.
- (ii) **Strengthen National Policy and Regulatory Capacity.** The project will assist towards the development of a policy framework for reduction in nutrient discharge, the strengthening of regulatory capacity and the promotion of organic farming.
- (iii) **Public Awareness Activities and Replication Strategy.** The project will support public awareness activities at the local and national level and promote regional co-operation among the Black Sea Coastal countries, and work closely with other institutions concerned with nutrient reduction in the Danube and Black Sea.
- (iv) **Project Management Unit (PMU).**

D. Organizational Structure

The Ministry of Waters and Environmental Protection (MWEP) has been designated by the Ministry of Finance (MOF) as the line Ministry with overall responsibility for implementation of the Project. The Project has three administrative levels: (a) Project Steering Committee (PSC) at National Level; (b) Project Co-ordination Committee (PCC) at Judet Level; and (c) Project Management Unit (PMU) located in the Judet. The principal agencies at the local level are the County Council (funding and technical assistance for the manure management system, the Prefecture (inter-agency co-ordination), Department of Agriculture (DGAIA - agricultural activities) and Environmental Protection Inspectorate (EPI - environmental monitoring).

E. Public Awareness

The project will support public awareness activities to achieve replicability of all components in Calarasi Judet. At the local level, the main audience will be the direct stakeholders of the project (local and county officials, farmers, community groups and NGOs). The objective of the activity will be to familiarize the population and help induce the behavioral changes necessary to the success of the project (use of a manure management system, respecting the environment-friendly agricultural practices, etc.). Farmers and other stakeholders will be presented the benefits of the activities in order to consolidate the new behavior patterns. Personnel from the Judet's agricultural consultancy office and other local institutions (OJCA, EPI, PHD, County Council) will receive training in the use and benefits of manure management systems, environment-friendly agricultural practices etc., and will participate in the demonstrations and field trials and thereby become a major vehicle for encouraging the adoption of these practices throughout Calarasi. The local campaign will also serve as a depository of information for the national and regional public awareness efforts through the use of information technology and other, conventional means of communication. At local level, the campaign will be implemented by one or more local NGOs working in close cooperation with the local institutions.

II. MANURE MANAGEMENT SYSTEM ACTIVITIES & INVESTMENT PROGRAM

A. Manure Management System

Summary of Proposed Activities and Investments: This component will provide grants for the installation of improved manure storage facilities and equipment for manure collection and application in the seven comunas. Grants on a cost-sharing basis of about 70% of total costs would be provided for the construction of village-level solid waste manure facilities and small storage bunkers with effluent collection facilities at the household level, as well as supply of equipment for manure handling and spreading. Villages and households wishing to participate in the investment program would be selected against agreed criteria and cost-sharing arrangements. Priority would be given to vulnerable groups, widows, female farmers and poorer households.

Fourteen of the twenty-one villages in the project area would be expected to invest in manure storage and handling facilities with costs shared between the project (grant), comuna and village households (cash and in-kind) and the Calarasi County, which would contribute some 25% (in cash) of the costs of platform construction. County Council engineering staff would collaborate on design of the village-level manure store and would work with the Environmental Protection Inspectorate (EPI) to see that the constructions met environmental guidelines on stopping manure leakage to surface or groundwater sources. Four piezometers (two upstream and two downstream) will be installed around each of the fourteen manure storage platforms to monitor the quality of groundwater, and to see if any seepage of manure to groundwater occurs. Community training and awareness on good practices for waste collection and manure management, including composting, testing, and field application, would be provided. See Working Paper 6 – Design of Village-level Manure Management Storage and Handling System, and Working Paper 7 – Feasibility Study for Manure Storage System, for details of project concept and design parameters.

Manure Management System – Key Elements: The proposed manure management storage system is based on 10 key elements:

- (i) Segregation of inert and recyclable from livestock wastes through the provision of a separate household waste container.
- (ii) Provide improved manure stores for storage of waste at a single impermeable store at the household with enough storage for up to 1 months production.
- (iii) Utilise the existing practice of those householders who transport waste by cart to the village platform. For those householders who do not have transport, a chargeable collection service to the village or comuna platform could be offered.
- (iv) Make use of the transfer of waste from the farm store to the platform to aerate the waste, promoting continued bacterial activity in the waste.
- (v) Deposition of the segregated inert materials in designated bunkers.
- (vi) Management of the waste at the main bunker involving stacking in shaped windrow heaps, 3metres high.
- (vii) The transfer of the waste from the household storage to the main platform will allow aeration and mixing of the waste. Active management of composting of a proportion of the waste is likely to be necessary. In particular this should include the tomato vines and the long maize stalks, but this activity should be kept to a minimum in order to reduce operating costs.
- (viii) Store the waste deep so that the areas receiving rainfall is minimised.
- (ix) Provide impermeable walls and floor to eliminate leaching.

- (x) Provide storage capacity for over the winter so that matured material will be available for use on the land

Manure Management System – Village-level store: The calculated capacity for a typical village is for 3200 tonnes of material after 4 months⁶. With a capability of storage at the household for at least one month, the effective storage period is 5 months. The objective should be to empty the platform by the end of autumn. The length of time that is needed to hold the material can be put to good effect in the stabilization of the waste. The recommended facilities at the platform are:

- Concrete area for the management of the waste;
- Bunkers for the segregated household wastes with metal cans to go for recycling, glass for landfill and future recycling markets, and plastic and other materials for landfill;
- Platforms for the safe disposal of glass and metal. It may be possible to utilise the existing platform locations where these do not pose an additional environmental threat;
- Catchment channel for the run-off (effluent) from the platform;
- Storage pits and tanks with impermeable base and walls⁷;
- Perimeter wall to contain the waste and prevent effluent leakage;
- Security fencing around the site and safety fencing of the effluent storage area;
- Office / Staff facilities and landscaping;
- Monitoring wells for the water table.

Manure Management System – Household Stores: The waste quantities arising at the average household have been used to calculate nominal capacity of household agricultural waste stores. A simple open fronted store with concrete base and 1.2 m tall walls would be sufficient for most households. A separate small capacity container should be provided for the collection of recyclable and non-recyclable household wastes. This should be approximately 90 litres capacity.

The minimum width of the agricultural waste store should enable access by machine so that the waste can be manually loaded by fork. The concrete floor shall slope at 1:100 towards the front. A drainage channel should be cast into the concrete base and should connect to a covered below ground tank of 500 litres capacity.

Manure Management System - Handling and Field Application: The manure handling and application system will comprise the following elements:

- (i) *Collection of waste from households and farms.* The current practice of bringing waste to the platform is to be retained and encouraged. The agricultural waste and the segregated waste is to be brought by the householder to the village-level store. The household waste will be deposited in the recycling bunkers. The use of skips would involve investment in specialised lorries and would increase the project costs.
- (ii) *Unloading of waste at the village-level store.* The carts of agricultural waste will be unloaded on a concrete apron at the front of the store or driven onto the store. An additional benefit of delivery to the bunker can be that the handling equipment used

⁶ Consultation with the mayors indicated that they would have preferred 6 months of storage. The additional one month of storage at households partly addresses this concern. Construction of the larger store would add 30% to the costs and would not be justified.

⁷ The storage basin has been designed to hold 30 days rainfall as it is expected that the liquid can be applied to land or returned to the waste at more frequent intervals than the waste is spread.

in management of the store can unload the bulk of the waste for the householder. The simple carts used do not have a tipping or self-unloading mechanism.

(iii) *Managing waste at the platform.* The periods over which the waste must be stored when it cannot be applied to land can be utilised to reduce the amount of active management of the waste to encourage it to break down. The movement of the waste after the period of storage at the homestead will be sufficient to aerate the material. Further handling once it has been placed in the store should be minimised. The management of waste at the store will involve the following operations:

- Movement of waste from the reception area and placing it in the store in a heap 2-3 metres high. For this operation and turning of the heap to assist the composting process as appropriate a loader machine is required. This should be a specialised machine. The loader should have an interchangeable fork and bucket attachment.
- The waste consisting mainly of animal materials is not expected to require active management. For the composting of some of the fibrous waste such as maize stalks and tomato haulm, these should be placed in rows running the length of the storage area. Turning and mixing can be achieved by moving the row to an equivalent position to one side with the loader avoiding the need for specialised compost turners. A new row of material started in the original position. The bucket attachment will be required for handling some waste in the store and also for transferring the accumulation of household wastes from the reception bunkers to trailers for recycling or deposition at the landfill.

(iv) *Spreading of the waste.* After the waste has been stored, it will be required as a nutrient source in agriculture. To enable best use of the waste during spring and late summer on cultivated ground and on growing crops specialised spreading machinery will be required. Given the high dry matter of the incoming waste rear discharge spreaders will be required. A tractor will be required to operate the spreader allowing the loader tractor to load the spreader.

(v) *Handling of Effluent.* The rainfall falling on the **village-level store** and associated runoff will be collected in a separate lagoon, or tank, with an impermeable lining. A vacuum tanker will be required to empty the lagoon/tank and spread the liquid onto crops, or return it to the waste heap. The strategy for controlling effluents at the **household-level bunker** is:

- *Minimisation* of volumes by attention to detail on roof drainage and keeping yard areas clean so that roof and yard drainage of rainwater does not come into contact with waste.
- *Catchment* of all effluents and rainfall on to concrete areas where there is waste. This will involve the construction of drainage channels to catch urine, drainage from pig yards and rainfall from dirty yard areas.
- *Containment.* All channels must be collected in a lined pit or storage tank. This tank should be covered and be located close to the stock housing. It must also be placed near to the storage facility so that effluent from this can also be contained.
- *Safe Disposal.* The first option for disposal of effluent is to lift it out of the tank by a long handled 4-litre scoop or with a bucket and pour it over the solid waste so that it is absorbed. When the waste has reached saturation the catchment channel will return any excess to the tank. Good practice would be to apply this liquid to the waste store when it is almost full with dry solid waste. The tank should be small so that the practice of application of the collected liquid must be

carried out frequently. A long narrow plan shape will make it easier to empty. The tank must have a heavy well fitting lid with a lockable fastener to prevent unauthorized opening. The second option is to utilize the service of the vacuum tanker associated with the main store to provide a special service of emptying the storage tank.

- (vi) *Additional items.* Hand tools, shovels, forks and brushes will be required together with an incinerator for animal carcasses. This could be of local design and use wood or corn-cobs as fuel.

B. Selection of Participating Comuna/Villages and Households

Eligibility Criteria: While the program would be expected to be driven initially by comunas' interest in building improved waste handling facilities, the comuna would be required to sign a contract with the PMU covering a package of interventions. The investments in manure storage and handling, agro-forestry and testing/demonstration of environment-friendly agricultural practices, would form an integrated package of environment-orientated measures to be adopted at the level of the comuna.

The criteria for selecting **comuna/villages** to participate in the improved manure storage and management system will be as follows:

- Comuna ready to sign a contract with the PMU embracing investment in a number of environment-orientated practices at the comuna level including the manure management system, agro-forestry or wood-lots on comuna land and the introduction of better grazing practices on comuna pastures;
- Availability of land that is rightfully owned by comuna/village, is suitable for the proposed construction, is non-arable land and the location is at least 10m away from a watercourse or drainage channel and 50m away from any well;
- Demonstration of a commitment to the recycling of the organic manure on agricultural land in the comuna and of ability to control the segregation of waste (plastic, glass, metal and manure including collected liquid phase) by householders at the household and the platform;
- Sufficient number of livestock to justify village-level storage and is source of pollution;
- Ability (with help from the Calarasi County Council) to obtain the necessary permits (satisfying legal requirements like minimum distance from any watercourse, electricity supply line, etc.) from local agencies required for issuing construction permit;
- Existing equipment (tractor and trailer) available for waste handling with provision of specialised equipment by the project;
- The manure storage platform design proposed by the PMU and approved by the County Council, is endorsed by the Comuna;
- Comuna agrees to be responsible for platform O&M costs and is ready to assure collection of waste from households without means of transportation;

- Comuna provides a contribution to cost of constructing platform, either in kind or in money, covering at least 5 % of the total cost of the platform;
- Comuna ready to supervise construction of household bunkers and guarantee householders proper use of materials provided for such construction;
- Comuna would have to sign an agreement confirming that applicable environmental legislation on platform operation would be applied, thereby accepting to meet any fines or penalties levied by the rightful authorities for failure to comply with the legal provisions.

The criteria for selecting **households** to benefit from the grant available for materials to construct a manure storage bunker at the household level, include number of animals, household composition, income level and future prospects for expansion. Priority will be given to vulnerable groups, including widows, female farmers and poorer households. Households will be ranked against the criteria agreed with the Comuna/village council, with appropriate weighting in favor of the less well off households; see Annex 3, for criteria and weighting system.

C. Implementation Responsibilities and Procedures

Implementation responsibilities: The cost of installing and managing manure management systems will be shared between the project and the beneficiaries at an overall ratio of 70% from the GEF and Government, 25% in cash from the County Council and 5% in kind from the beneficiaries. The responsibilities for implementing these investments are as follows:

- **Selection of participants:** (Comuna/villages/households) by PMU in response to application by Comuna for project assistance, and against criteria agreed by County Council;
- **Design of Facilities:** by PMU (engineering services to be hired) and the County Council with the collaboration of Comuna;
- **Procurement:** of contractor's services and equipment by PMU with locally formed Commission to oversee tendering process;
- **Construction:** of storage platforms at Comuna/village level by private contractors;
- **Funding:** shared between GEF (65 – 70%); County Council (25% of cost in cash); Comuna/village (5 – 10% in kind being value of land and of labor for clearing site and tree planting around the construction);
- **Environmental Monitoring and Verification Final Construction:** Based on the environmental impact study carried out for issuing the environmental permit, EPI, in collaboration with Ministry of Public Works and Territorial Planning's Local Inspectorate, verifies that the finished construction meets building and environmental standards;
- **Monitoring of results:** by PMU.

Implementation procedures: Implementation would proceed as follows:

- Comunas/villages interested in participating in the project would apply to the PMU and be asked to complete an application form (Annex 1) to be submitted to the PMU;
- PMU checks that application meets criteria and can satisfy cost-sharing arrangements and holds meeting with village council and households to discuss all aspects of the system and financing;
- PMU submits the application to the Project Co-ordination Committee (chaired by County Council Chairman) for confirmation of eligibility for County Council contribution;
- PMU prepares preliminary agreement (Annex 2) with comuna/village council covering the provision of assistance for the manure handling system (village-level storage facilities, household bunkers and manure handling and spreading equipment); agro-forestry on comuna land and introduction of better management practices for communal grazing lands. Furthermore, the comuna/village council would commit to working with farmer and family associations on the adoption of environment-friendly agricultural practices on privately owned land;
- PMU prepares addendum to co-financing agreement (Annex 5) with County Council covering latter's financial contribution and responsibilities of the respective agencies for each comuna/village facility;
- PMU in collaboration with County Council engineering staff follow procedures for selection of engineer to design⁸ the manure storage platform and other elements of the system according to master guideline in feasibility study (Working Paper 7);
- PMU establishes commission (composed of representatives of County Council, Mayor(s) of concerned comuna(s) and PMU) for overseeing selection of construction contractor using bidding documents and following NCB procedures acceptable to the Bank;
- Selection of households (Annex 3) to participate in construction of household bunkers carried out by PMU in collaboration with comuna and village council;
- PMU prepares grant agreement (Annex 4) with Comuna;
- Comuna commissions environmental impact study to obtain EPI permit;
- Construction of platform (by contractor under supervision of independent engineer) and household-level waste stores (by householders under supervision of the Mayor's office, and with guidance from PMU);
- County Council transfers its 25% contribution to cost of manure storage to PMU special account and PMU makes payments to (a) contractor according to payment schedule, and (b) suppliers of materials for household bunkers;

⁸ Detailed design to be approved by County Council engineering staff and, under Romanian law, to be verified by independent expert.

- EPI in collaboration with Ministry of Public Works and Territorial Planning's Local Inspectorate verify that the finished construction meets building and environmental standards; and
- Monitoring and evaluation of use of the manure management system by PMU.

Cost-sharing arrangements are summarized in table 1:

Table 1: Cost-sharing Arrangements for Manure Management System

Investment Item	Cost per Unit /village	Cost sharing
1. Village level platform (solid waste store)	US\$99,890	Construction by local contractors to be funded by GEF, Calarasi County Council and GOR, and procured following national competitive tendering procedures. Plans to be prepared by engineers recruited by the PMU in collaboration with the County Council. Beneficiaries provide land and clear site.
2. Access roads	US\$5,600	Construction by local contractors. To be funded from other rural development programs (e.g. SAPARD) or by comunas. Comunas to submit projects proposals to be funded in the frame of rural development programs.
3. Handling and application equipment	US\$27,900	New equipment to be funded by GEF and procured following competitive tendering procedures. Farmer associations to provide tractors for spreading.
4. Household bins for non-manure items	US\$7,250 ⁹	GEF & County Council
5. Household manure storage bunkers	US\$305	Mayor's office to provide design and supervision. Materials to be provided by GEF. Householders to provide labor for construction.
6. Operation of the comuna/village waste store	US\$6,200/village store/year	Mayor's office to hire necessary staff.
7. Application of manure to fields	To be determined	For comunas land by comunas using the equipment provided by the project. Farmer associations using own equipment.
8. Management of non-manure waste for recycling or landfill	To be determined	Mayor's office as part of operating platform.

Procurement of Contractors and Technical Assistance: The village-level waste stores are estimated to cost in the order of US\$100,000 equivalent. They may be procured on lump sum, fixed price contracts awarded on the basis of quotations received three qualified domestic contractors in response to a written invitation. The Invitation shall include a detailed description of the work, including basic specifications, the required completion date, a basic form of agreement and relevant drawings, where applicable. The award shall include a

⁹ Assumes 320 households in each village acquire bins for bottles, plastics etc.

detailed description of the work, including basic specifications, where applicable. The award shall be made to the contractor who offers the lowest price quotation for the required work, and who has the experience and resources to successfully complete the contract.

Investment Program: The proposed investment program for comuna/village platforms and household stores is shown in table 2.

Table 2: Construction and Equipment Program for Manure Management System at Comuna/Village level

Project Activity	Pre-Project	PY1	PY2	PY3	PY4	PY5	Total
Comuna/village-level waste store (number)	1	1	4	4	4		14
Handling and Application Equipment (number sets)	1	1	4	4	4		14
Manure storage bunkers at household level (number)	250	250	1000	1250	1250		4000
Bins for recyclable waste	250	350	2050	2050	2050		6750

D. Training Program

Before any investment in materials or equipment can be authorized an information and training program for the Mayors, farmers, householders and operational staff should be in place. This training program should aim to:

- Establish confidence that the investment is at appropriate levels and will be supported by changes in practices;
- Achieve a higher turnover on recycling to land than the present methods used on farm stores and platforms;
- Promote correct use of the facilities;
- Maximise the number of households served;
- Safeguard quality of materials for recycling;
- Ensure markets for the stored material ; and
- Achieve responsible recycling.

The training program would include:

- (i) *Awareness training.* An initial 7-day study tour of farms in the UK demonstrating the storage and recycling of agricultural wastes is proposed for the Mayors, leaders of farmers' associations, DGA and extension staff. Commercial farms in the UK have been involved in a series of Government sponsored demonstrations on the recycling of livestock wastes to land. The purpose of this training would be to demonstrate that very long storage periods are not necessary for effective recycling; encourage changes in the farming practices designed to make better use of the waste; demonstrate choice of housing and waste system as an integrated concept; and demonstrate the integration of livestock housing with the waste management and recycling system.
- (ii) Training for the staff who will manage the comuna/village platforms in the use of machines and the management of waste segregation.
- (iii) Training and information program to educate the householders in: the benefits to the community of waste recycling; the collection of effluents; use of the household store; procedures for the use of containers for the house waste; management of the waste at

household level; deposition of segregated waste at the platform; the use of the platform and the need to deposit the segregated waste into the appropriate bunker.

- (iv) Information and training in the business management and administration of a waste recycling facility, for Mayors, other comuna officials and the site staff. This should deal with the recycling of materials from the livestock and the households.
- (v) Training and extension aimed at all farmers and the farming associations on: the value and other benefits of the recycling of nutrients from livestock with rotation examples; good practice in the storage and recycling of nutrients; preparation and timing for application of manure.

E. Larger Livestock Units:

There are some 5 – 10 larger livestock units owned by commercial farming societies that are a serious potential source of pollution. These larger units include dairy and pig units and will require specific designs depending on whether the manure system is liquid or solid based. In principle the solid based systems will use the designs for the village-level manure stores while the liquid based systems will require a slurry handling system. Custom designs will be required to deal with the following forms of waste:

- (i) Dairy cattle waste: Dairy cattle are wintered in cowsheds and fed on hay and straw with considerable quantities of straw used for bedding. The existing system of waste storage employs a farmyard manure based management technique. The store could be updated along the lines of the village platforms for a farmyard manure system. This would require impermeable floors and walls and catching run-off in a reception tank.
- (ii) Dirty water: Dirty water is rainwater contaminated by when it falls on dirty yards and water used for washing surfaces and equipment. It can also include urine where this is collected separately from the solid waste. Rainfall was allowed to fall upon dirty yard areas from the cowshed roofs. All roofs should be fitted with roof gutters so that this rainwater can be conducted away from dirty yard areas and to soak-away without becoming contaminated with waste. The water falling directly onto dirty concrete yard areas must be intercepted by a channel cast into concrete at the edge of the dirty yards and channelled away to below ground dirty water storage tanks. The storage tanks can also store the wastewater that has been used to wash the milking equipment and dairy. The tanks must be of sufficient size to allow for maximum daily rainfall and the capacity of the waste handling system to dispose of it safely to land.
- (iii) Pig Farm Wastes: The pig farm observed utilised a slurry system with added water to flush the waste out. This slurry was pumped to an unlined pit where the liquid fraction was allowed to soak away. This practice is environmentally unacceptable. The options available are:
 - An impermeable basin can be excavated and lined and in which the slurry can be stored. This could be fitted with a de-watering section into which the liquid can drain.
 - Mix the pig slurry with the cattle waste in an above ground store with permeable walls and a collection channel around the perimeter. The separated liquid is collected in a basin with an impermeable lining.

- An above ground slurry tank with mixing equipment to avoid settlement of the slurry. This could utilise the existing below ground mixing tank and transfer pump at the farm. The slurry would then be handled and spread with slurry spreaders.

The project would provide these larger, private units with a grant of up to about one third of the cost of installing appropriate waste handling systems. The amount of the grant would be based on the overall commercial size of the unit and its capacity to make the necessary investments. The project could provide assistance with the design of the appropriate solid and/or slurry handling system. The individual or company would complete an application (Annex 6) and submit the proposed design and cost estimates to the PMU. The successful applicants would sign a grant agreement (Annex 7) detailing the provision of project assistance and the respective responsibilities.

III. MONITORING AND EVALUATION

A. Evaluation of the Results of the Manure Management System

The PMU will be responsible for monitoring and reporting on overall Project performance. This will include activities to evaluate Project performance with the manure management system, and to assess the social impact and the response of beneficiaries, as well as detailed environmental monitoring.

The Project impact will be tracked against the key performance indicators outlined below. Specific indicators are included in Working Paper 14.

Project Objectives: Indicators of attainment of Project objectives include:

- High percentage of households using improved manure storage and handling system;
- Increased awareness of environmental issues related to animal waste storage and application among farmers and communities inside and outside project area;

Project Outputs: The project results include:

- Experience for continuation of such activities domestically and abroad;
- Making the local community aware of the importance of dealing with animal waste in an environment-friendly way.

B. Environmental Monitoring

Under the manure management system component, the project will provide for 4,000 manure storage bunkers at individual farmer's homesteads to store manure from their domestic animals and 14 village-level manure storage facilities. The environmental concerns under this component may include leakage of the manure from the village-level storage facilities (if construction is not made according to specifications), inappropriate manure spreading in the fields and improper cleaning of the individual manure storage tanks and large manure platforms. An environmental assessment has been made and mitigating measures proposed to address these environmental issues are given in the Environmental Management Plan, which

includes provision for activities undertaken under this component to be closely monitored with regular inspections by the local environmental agency. Farmers will be advised on measures to address any adverse environmental impacts arising out of inappropriate manure management. All civil works that the project will support will be subject to review and approval by the local environmental authorities.

The environmental monitoring of the manure management system component would be handled by the EPI whose capacity to undertake such monitoring would be strengthened under the project. The EPI will be responsible for monitoring the water and soil quality at selected sites, as well as the long-term environmental benefits from reduced discharges of nutrients and microbial contaminants into surface and groundwater.

The EPI will ensure that the constructions of village level manure facilities have met environmental guidelines on stopping manure leakage to surface or groundwater sources. Four piezometers (two upstream and two downstream) will be installed around each of the fourteen village level manure facilities. This will allow EPI to conduct periodic monitoring of the quality of groundwater to ensure that seepage of manure to groundwater does not occur. The project will provide additional laboratory equipment and training to EPI staff and insure that EPI's capacity is adequately upgraded to perform various project tasks satisfactorily. Community training and awareness on good practices for manure storage and field application for nutrient management, including soil testing kits to monitor the status of soil N and P, would be provided.

Also, three demonstration site will be established in the project area to promote the use of better manure storage and handling facilities and other environment-friendly activities. At these three demonstration sites, weekly/monthly samples for surface runoff, ground water, and soil quality will be collected to determine the impacts of the better agricultural management practices on soil and water quality and production.

C. Social and Economic Assessments

Social Assessment: The social assessment (SA) is a crucial mechanism for establishing how effectively the Project meets its goals. The farmers' attitude to environmental management will affect project results and potential replication elsewhere.

The baseline survey completed during project preparation has ascertained current attitudes to agriculture and environmental practices, potential farm demand for support such as that offered by the Project, access to information, and attitudes to institutions. The SA team will repeat the baseline survey at two-year intervals so as to track changes resulting from project activities, including investments in the manure management system.

The second instrument will be beneficiary surveys with a sample of participating households. Householders will be interviewed shortly after joining the Project, and one or two years after completing the investment. The interviews will focus on the level of interest and expectation, satisfaction or dissatisfaction, and on how benefits from the manure management system are perceived by the beneficiaries. The interviews should also focus on eligible households not in the Project to help managers understand the reasons why they did not participate or withdrew.

Economic Assessment: If this Project is to be replicated nationally or internationally, it needs to evaluate the financial and economic impact of its activities as compared to the effectiveness of other intervention methods under similar programmes in Romania and in other countries. It should also study the impact of its interventions on farm profitability. The Economic Assessment will also ascertain farmers' willingness and ability to finance future interventions

in manure management, and the economic justification of such interventions on a farm/regional/national level.

D. Replication Strategy

Replication within Romania: The APCP has been designed as a model for further replication within Romania and as a model for potential application in other countries. It is anticipated that, with adaptation based on implementation experience, the Project will be expanded on a phased basis to cover the entire country. The Project therefore includes funds to support preparation of a national strategy for replicating the activities.

Transfer of Experience to Other Countries: The GEF is especially interested that such opportunities be provided for replication of the experience gained from the design and implementation of the Project to other countries concerned with the management of non-point source pollution from agriculture. In this context, the MWEP and co-operating Romanian authorities will agree to invite interested parties from other countries, at their own expense, to make formally arranged visits to Romania to learn about Project implementation. In addition, to facilitate replication elsewhere, the MWEP will make available to other parties information concerning Project design, implementation experience and costs for management, implementation and monitoring.

9/17/03 9:27 AM

ROMANIA
Agricultural Pollution Control Project

Registration No.:

APPLICATION PROFORMA

[For provision of matching grants for the installation of improved manure storage facilities and equipment for manure collection and application, wellhead protection, agro-forestry, tree planting, and grazing management on comuna's land]

Comuna:

Represented by Mayor: Ms/Mr

Being informed about the Agricultural Pollution Control Project, financed by the Global Environment Facility and the Government of Romania, and the overall objective of the project to significantly increase the use of environment-friendly agricultural practices in the project area and thereby reduce nutrient discharge from agricultural sources to the Danube River and Black Sea, and having in view that our Comuna is part of the Project area,

We thereby apply for Grants on a cost-sharing basis for the following package of investments in environment-friendly agricultural practices:

1. Construction of village-level solid waste manure facilities and small storage bunkers with effluent collection facilities at the household level, as well as supply of equipment for manure handling and spreading.
2. Tree planting on the comuna degraded land.
3. Planting of shelterbelts/windbreaks, hedge rows, narrow vegetative barriers, filter strips and riparian buffers.
4. Wellhead protection, demonstration program.
5. Improvement of Comuna's pastures as well as the management of communal grazing land.

We are informed that the villages and households wishing to participate in the investment program would be selected against agreed criteria and cost-sharing arrangements. Priority would be given to vulnerable areas and Comunas demonstrating a higher money/in kind contribution and strong commitment to the Project.

In supporting our request, we declare that at the moment of signing this application we are meeting the selection criteria for the construction of solid waste manure facility as follows:

- | | <input type="checkbox"/> Y | <input type="checkbox"/> N |
|--------------------------------------------------------------|----------------------------|----------------------------|
| a) Availability of land meeting the following requirements: | | |
| The land is rightfully owned by the Comuna authority | <input type="checkbox"/> | <input type="checkbox"/> |
| The land is suitable for the proposed construction objective | <input type="checkbox"/> | <input type="checkbox"/> |
| The land is non-arable land | <input type="checkbox"/> | <input type="checkbox"/> |

- b) Availability of equipment for manure handling and spreading
- | | | |
|----------|--------------------------|--------------------------|
| Tractor | <input type="checkbox"/> | <input type="checkbox"/> |
| Trailer | <input type="checkbox"/> | <input type="checkbox"/> |
| Spreader | <input type="checkbox"/> | <input type="checkbox"/> |
| Tanker | <input type="checkbox"/> | <input type="checkbox"/> |
- c) The comuna is ready to provide collection service for the households without transport facilities
- d) The comuna is committing to obey applicable environmental legislation on manure operation.
- e) The comuna endorses the manure storage design proposed by the PPU and approved by the Calarasi County Council
- f) The comuna obtained the permits and authorizations for construction as follows:
- | | | |
|------------------------------------------------------------|--------------------------|--------------------------|
| - land planning certificate (issued by the County Council) | <input type="checkbox"/> | <input type="checkbox"/> |
| - OCAOTA permit | <input type="checkbox"/> | <input type="checkbox"/> |
| - permit from the Centre for Preventive Medicine | <input type="checkbox"/> | <input type="checkbox"/> |
| - ICLPUAT authorization | <input type="checkbox"/> | <input type="checkbox"/> |
| - Water Management Company permit | <input type="checkbox"/> | <input type="checkbox"/> |
| - Environmental Impact Assessment Study | <input type="checkbox"/> | <input type="checkbox"/> |
| - Environmental authorization | <input type="checkbox"/> | <input type="checkbox"/> |
| - Construction Permit | <input type="checkbox"/> | <input type="checkbox"/> |
- g) The comuna would provide the funds required and will be responsible for the O&M of the manure storage, complying with applicable environmental legislation
- h) The comuna agrees to be the guarantee for the householders selected to receive support for the construction of the household bunkers and well head protection, that they will properly use the materials given by the Project for the agreed construction purposes
- i) The comuna is committed to participate in the tree planting program, providing the land and the labor for planting and maintaining the trees, according with the Project provisions
- j) The comuna is committed to work with the Project to increase the use of environment-friendly agricultural practices among the farmers, facilitating the training activities and workshops organized by the Project for farmers

In case of being qualified to participate in the project, I declare that:

1. The Project Investments will be protected, maintained and used in an appropriate manner.
2. The comuna will be made accessible for demonstration purpose and monitoring activities connected with the project.
3. We are ready to sign a GRANT AGREEMENT with the PMU.

Date:

Signature:

Approved by the Project Coordination Committee:

Romania
Agricultural Pollution Control Project

**Preliminary Agreement to be drawn up between Comuna and Project Management Unit
(PMU)**

PRELIMINARY AGREEMENT

By and between: the Comuna of
Represented by.....

And the Agricultural Pollution Control Project represented by:.....

On defining mutual commitments and principles for co-operation during accomplishment of the “Agricultural Pollution Control Project” financed from the funds of the GEF and from local and central governments, with participation of the project’s beneficiaries – the village households.

I. GENERAL PROVISIONS

1. The project’s main objective is to reduce the flow of nutrients into ground and surface waters.
2. Environmental actions shall be taken among the participating households to meet that objective. The project shall help the Comuna to develop and accomplish environmental plans and shall provide matching grants for environmental investments in the comuna, namely facilities for manure storage at the village and household level, manure handling and application equipment, agro-forestry on comuna land and the testing/demonstration of environment-friendly agricultural practices.
3. The project shall be run in compliance with the principles set forth in the Operation Manual for the Manure Management System.

II. PARTICULAR PROVISIONS

1. The PMU shall be responsible for the following:
 - Materials advertising the project within the Community (posters, leaflets, etc.);
 - Recruitment of consultants to assist the Comunas and householders qualified for the project;
 - Sample applications;
 - Training courses and presentations for households to familiarise them with the project scope;
 - Development plans including environmental aspects;

- Signing agreements with the Comunas and householdes/farmers who shall receive grant funds for the project tasks;
 - Preparation of tender documents and running bids for construction work and purchase of agricultural equipment;
 - Grant financing on a cost-sharing basis, for constructing manure storage facilities at village level, manure handling and spreading equipment, materials for construction of manure storage bunkers/pads at household level, planting materials for agro-forestry and planter and costs of testing/demonstration programs for environment-friendly agricultural practices;
2. The Comuna of shall provide comprehensive assistance in the project on its territory, including:
- Active participation in advertising the project and environment-friendly agriculture;
 - Assistance in distribution of enquiries among interested farmers and participation in qualification procedures;
 - Assistance in organising farmers' groups;
 - Obtain construction permits;
 - Supervision over construction of household manure bunkers/pads;
3. The Calarasi County Council shall be responsible for the following:
- Co-financing of the village-level manure store;
 - Participate with PMU in design of village-level manure storage facilities;
 - Supporting Comuna in obtaining construction permits; and
 - Participate in tendering Commission overseeing supervision of construction of village-level manure store.

III. FINAL PROVISIONS

This Preliminary Agreement includes initial (preliminary) mutual obligations and principles for co-operation between the parties of the project.

The Preliminary Agreement may be subject to amendment or change through separate bilateral agreements.

This Preliminary Agreement has been signed on in

On behalf of the Community.....

On behalf of the PMU.....

Endorsed by Calarasi County Council.....

ROMANIA
Agricultural Pollution Control Project

APPLICATION PROFORMA
[For supply of materials
to construct a household manure pad]

Registration No.:

The undersigned,

Name: Personal Code

Village: Comuna:

Telephone no.:

Being informed that:

- our comuna was selected and expressed its commitment to participate to the Agricultural Pollution Control Project, financed by the Global Environment Facility and the Government of Romania,
- the objective of the Agricultural Pollution Control Project is reducing water pollution with nutrients and other agricultural pollutants, and one of the measures proposed is the improvement of the manure storage facilities at comuna and household level,
- the provision of grants on a cost-sharing basis for the installation of improved manure storage facilities at comuna and household level,
- priority would be given to vulnerable groups, widows, female farmers and poorer households,

by filling the present application I express my will to be included in the investment program.

I declare that on the day of signing the present application:

1. I have in my household the following number of animals:

Type of Livestock	Present Number	Comments
Cows		
Other cattle		
Pigs – sows		
Pigs – fattening		
Horses		
Sheep and Goats in hoheshold for >9 months/year		
Poultry		

I plan to increase the average number of the livestock.

2. My homestead layout is as follows:

Distance between the household and my agricultural land:

- > 10 km
- 2 – 10 km
- < 2 km

I have a cart

Height of water table < 10 m

Distance livestock housing to closest well <30 m

3. Farming organization:

Member of Farmer/Family Association

Individual

4. Which of the following situations is appropriate for yourself:

I am a widow

I am a female farmer

I considered myself that my family is: very poor poor

In my family there are persons with disabilities

In case of being qualified to the project, I declare that:

1. I will use the received materials to build the household manure storage following the designs provided by the project and under the supervision of the expert designated by the comuna;
2. I will contribute with the labor for the household manure storage construction;
3. I will segregate the domestic waste (bottles, plastic, metal, paper etc.) from the manure;
4. I will use the constructed facility in an appropriate manner;
5. I will make my household accessible for demonstration purpose and monitoring activities connected with the project.

Date:

Signature:

Approved by the Comuna Council:

Score based on the declaration:

Selected for financing by PMU:

Approved for Supply of Materials by PMU:

ROMANIA
Agricultural Pollution Control Project

Household Application for Supply of Materials to Construct Household Manure Pad a/

EVALUATION OF PARTICIPANT'S DECLARATION

Householder ----- Application number: -----

Village: ----- Comuna: -----

CRITERIA	YES/NO	NUMBER	X FACTOR	POINTS	Comments
1. Number of Animals:					
Cows			5		
Other cattle			4		
Pigs - sows			4		
Pigs - fattening			3		
Horses			4		
Sheep & Goats in H'ld for > 9 months/year			2		
Poultry			0.25		
Livestock numbers expected to increase b/			3		
Total for Number of Animals					
2. Homestead Layout:					
Distance to land:					
> 10 km			5		
2-10 km			3		
< 2 km			0		
Do not have a cart			2		
Height of water table < 10 m			5		
Distance livestock housing to closest well < 30m			5		
Total for Homestead Layout					
3. Farming Organisation					
Member of Farmer/Family Association			4		
Total for Farming Organisation					
4. Family Situation					
Widow			10		
Female Farmer			10		
Poor/very poor			10		
Persons with disabilities			5		
Total for Family Situation					
GRAND TOTAL					

a/ Priority will be given to households headed by Widows, Single Women, Veterans, as well as to low income households

b/ Check whether any gestating animals

Evaluated by: ----- Date: ----- Signature: -----

Romania
Agricultural Pollution Control Project

Grant Agreement to be drawn up between Comuna and Project Management Unit (PMU)

GRANT AGREEMENT No.

By and between: the Comuna ofRepresented by.....

And the Agricultural Pollution Control Project represented by:

On defining mutual commitments and responsibilities for implementing the components of the “Agricultural Pollution Control Project” financed from the funds of the GEF and from local and central governments, with participation of the project’s beneficiaries – the village households.

Article 1

This Agreement shall be part of the Agricultural Pollution Control Project, hereinafter referred to as “the Project” implemented by the Ministry of Waters and Environmental Protection on behalf of the Government of Romania and the Global Environment Facility.

Article 2

The object of the Agreement is the construction on the Comuna/village territory of the manure storage and handling facilities described in the Cost Calculation(s) attached hereto (Attachment1), the provision of manure handling and spreading equipment listed, the development of agro-forestry in the Comuna, as well as the promotion of the adoption of environment-friendly agricultural practices by the farmers (farming in association or as individuals) located in its jurisdiction.

Article 3

With respect to the provision of manure storage facilities and handling system, the Comuna shall be committed to the following:

1. To utilise the manure storage facilities for waste from the livestock described in Attachment 1.
2. To obtain the necessary permit(s) for construction of the facilities mentioned in Article 2 of the Agreement by (date)
3. To make available land for construction of the aforementioned facilities within the date set forth by the Supervising Engineer appointed by the PMU.
4. To cover% of the total cost of the investment including construction of the facilities described in items ----- of Attachment 1, in compliance with the Cost Calculation(s) attached thereto, at the amount being the equivalent ofROL.
5. To ensure the technical supervision for the construction of manure pads by householders (using materials described in Article 4, item 5) and to provide to the PMU written confirmation of the completion and standard of each such construction.
6. To make available at the appropriate times tractors andtrailers for handling the collection, storing and spreading of manure.
7. To use the facilities in appropriate and adequate manner in compliance with the principles set out in the Operating Manual.

8. To make the manure storage facilities accessible for quality measurements of surface and ground waters by the Environmental Protection Inspectorate (EPI) as well as for organised visits, presentations, research and controls planned for in the project, for 5 years from completion of the facilities.
9. To participate in training courses organised by the DGAIA.
10. To keep simplified accounting records according to the templates delivered by the PMU.
11. To develop a utilisation plan for the manure and inform the PMU of this plan.

Article 4

With respect to the provision of manure storage facilities and handling system, the PMU shall be committed to:

1. In collaboration with the County Council Engineer and Comuna, design the required village-level manure storage facility and deliver to the Comuna technical documentation of the facilities to be financed from the Project funds in compliance with pertaining Cost Calculation(s) (Attachment 1).
2. Select the Contractor for construction of the works in accordance with the project procedures.
3. Cover ...% of the total cost of the investment including construction of the facilities and provision of equipment described in items....., Attachment 1, in compliance with the Cost Calculation(s) attached thereto, at the amount being equivalent ofROL
4. Pay the amounts mentioned in item 3 for civil works directly to the Contractor, in compliance with the provisions of the contract signed by the PMU, the Comuna and Contractor following the completion of the bidding process and award of contract.
5. Pay the amounts mentioned in items....., Attachment 1, for equipment directly to the supplier in compliance with the provisions of the contract signed between the PMU and supplier following the completion of the bidding process and award of contract.
6. In collaboration with the Comuna agree the list of households to receive building materials for construction of household manure pads.
7. Select the suppliers for provision of the building materials (item 5 above) for the household manure pads and arrange for householders to collect building materials directly from the suppliers against agreed documentation.
8. Pay the suppliers for the building materials (item 5 above) on receipt of confirmation of collection by householders.
9. Provide advisory services and organise training courses through DGAIA during the project delivery.

Article 5

Facilities constructed by virtue of this agreement shall become the Comuna's property on completion.

Article 6

Should the Comuna fail to fulfil the conditions mentioned in Article 3, the PMU may claim reimbursement of the investment provided for the construction of the facilities mentioned in Article 4, item 3, of the agreement with pertaining interest.

Article 7

With respect to the development of agro-forestry and application of environment-friendly agricultural practices, the Comuna shall be committed to the following:

1. Planting up of hectares of Comuna land using species advised by the Department of Forests, Calarasi.
2. Provision of the necessary labour for the planting program.
3. Subsequent management of the planted area.
4. Promoting the adoption of environment-friendly agricultural practices by farmers (farming in association or as individuals) in its jurisdiction.

Article 8

With respect to the development of agro-forestry and application of environment-friendly agricultural practices, the PMU shall be committed to the following:

1. Provision of saplings for the planting up of hectares of Comuna land using species advised by the Department of Forests, Calarasi.
2. Provision of a planting tool on temporary loan.
3. Operating a testing/demonstration program for environment-friendly agricultural practices.

Article 9

The Agreement is subject to termination in writing by any party giving one month's notice. In such a case, the party to terminate the agreement shall reimburse the other party all the cost incurred by that party.

Article 10

All matters not regulated in this Agreement shall be governed by the Civil Code.

Signed on.....in.....

For the Comuna.....

For the PMU.....

Endorsed by the County Council.....

ROMANIA
Agricultural Pollution Control Project

INVESTMENT COST CALCULATION
COMUNA

Item no.	Name of Expenditure	Total Value (thousand ROL)	Of which subject to tendering (thousand ROL)	Financed by ¹⁰ :				
				GEF	County Council	Comuna	Beneficiary	Government of Romania
1.	Manure Storage Facility					-	-	
2.	Loader				-	-	-	
3.	Tractor		-			X		
4.	Spreader				-	-	-	
5.	Trailer		-			X		
6.	Tanker				-	-	-	
7.	Shredder				-	-	-	
8.	Bins					-	-	
9.	Licenses & Permits from Agencies		-	-	X	X	-	-
10.	Field Investigation		-	-	-	X	-	-
11.	Land and Labor for Manure Storage		-	-	-	X	X	-
12.	Access Roads to the Manure Storage		-	-	-	X	-	-
13.	Saplings ¹¹				-	-	-	
14.	Planting (Labor) ¹²		-	-	-	X	-	-
15.	Materials for Household Bunkers				-	-	-	
16.	Labor for Household Bunkers		-	-	-	-	X	-
17.	TA for Manure Management				X	X	X	X
18.	Design Engineer				X	X	X	
19.	Study Tour		-		X	X	X	X
20.	Workshop		-			X	X	

¹⁰ X for in kind contribution

¹¹ tree planting around the Manure Storage

¹² for tree planting around the Manure Storage

Item no.	Name of Expenditure	Total Value (thousand ROL)	Of which subject to tendering (thousand ROL)	Financed by ¹⁰ :				
				GEF	County Council	Comuna	Beneficiary	Government of Romania
21.	Operating Budget for Manure Storage		-	X	X		X	X
22.	EPI Technical Assistance		-	-	X	-	-	X
23.	Department of Public Works TA		-	-	X	-	-	X
24.	County Council TA		-	-	X	-	-	X
25.	Comuna Council – Technical Support for household bunkers		-	-	-	X	-	-
26.	Well Head Protection		-	-	-	X	X	
27.	Rehabilitation of Current Platform		-	-	-	X		
28.	Saplings – for tree planting & windbreaks ¹³				-	-	-	
29.	Labor – for tree planting ¹⁴		-	-	-	-	X	-
30.	Fencing ¹⁵				-	-	-	
31.	OJSPA Technical Assistance for tree planting		-	-	-	-	-	X
32.	OJCA Technical Assistance for tree planting		-	-	-	-	-	X
33.	Comuna Council – Technical Support for tree planting		-	-	-	X	-	-
34.	Forestry Department - Technical Support for tree planting		-	-	-	-	-	X

¹³ Tree planting and windbreaks/shelterbelts on comuna land

¹⁴ For the tree planting and windbreaks/shelterbelts on comuna land

¹⁵ To prevent grazing on the planted with trees land

Romania
Agricultural Pollution Control Project

Co-financing Agreement with the Calarasi County Council

Between the parties:

CALARASI County Council, with headquarters in Calarasi, 1, 1 Decembrie 1918 Street, 8500

And

“Agricultural Pollution Control Project” Project Preparation Unit, with head offices in Calarasi, 26 Prelungirea Bucuresti Street, bl.D 3, H20

In view of the following:

1. The Agricultural Pollution Control Project (APCP) has the primary goal of increasing the utilization of environment–friendly agricultural practices throughout the Calarasi county area, thus also reducing Danube and Black Sea nutrient pollution from agricultural sources. For the purpose of achieving this general objective, the Project will support the Government of Romania in:
 - Promoting the adoption of environment–friendly agricultural practices by farmers’ formal and informal associations and by individual landowners within the seven communes located in Calarasi county (Al. Odobescu, Independenta, Vlad Tepes, Vilcelele, Cuza Voda, Gradistea and Ciocanesti)
 - Promoting sustainable agricultural land-use within Boianu-Sticleanu polder area, including the preparation of a conservation management plan for Iezer Calarasi wetland area
 - Strengthening national and local level regulatory and strategy capacity on environmental protection related issues
 - Promoting specific regional level co-operation
2. APCP will be funded by GEF (Global Environment Facility) through the World Bank and co-financed by the Government of Romania, by Calarasi County Council and by several beneficiaries.
3. APCP is managed at Calarasi county level, by the Project Preparation Unit (PPU), nominated for this job through an Order issued by the Minister of Waters and Environmental Protection.

The aforesaid two parties mutually agreed on the following clauses:

1. The Calarasi County Council commits itself to render a co-financing contribution to the APCP project, in a total amount of USD..... broken down by expenditure categories, as presented within Annex 1 of this document.
2. The Calarasi County Council will allocate the sum mentioned under clause 1. of this document, based on a formal financial resources request, that is prepared and submitted by PMU on a monthly/quarterly basis. Sums officially requested by PMU

would be transferred into a specific destination account opened within the Calarasi Treasury in the name of PMU.

3. PPU commits itself to make available to the Calarasi County Council, each month/quarter or whenever requested, the justification documents pertaining to payments made from the specific destination account opened within the Calarasi Treasury.

On behalf of,
CALARASI County Council:

On behalf of,
Project Management Unit:

ROMANIA
Agricultural Pollution Control Project

Registration No.:

APPLICATION PROFORMA

[For supply of grants to cover the cost for the installation of improved manure storage facilities for Individual Farmers with Larger Livestock Units]

Registration No.:

The undersigned,

Name:

Personal Code

Village:

Comuna:

Telephone no.:

Representing the farm:

Being informed about:

- the Agricultural Pollution Control Project, financed by the Global Environment Facility and the Government of Romania, and the overall objective of the project to significantly increase the use of environment-friendly agricultural practices in the project area and thereby reduce nutrient discharge from agricultural sources in Romania to the Danube River and Black Sea,
- the GRANTS available on a cost-sharing basis, for the improvement of existing improper manure facilities, for the individual larger livestock farms,

and having in view that my farm is located in the Project area,

I thereby apply for a Grant on a cost-sharing basis for covering the cost of construction of the facilities as described in the attached project. The project was elaborated according to Romanian standards and all required authorizations were obtained.

I declare that on the day of signing the present application:

1. I have on my livestock farm the following number of animals:

Type of Livestock	Present Number	Comments
Cows		
Other cattle		
Pigs – sows		
Pigs – fattening		
Horses		
Sheep and Goats in hoshold for >9 months/year		
Poultry		

2. I plan to increase the average number of the livestock.

3. I own the farm in the following land structure and I plan (I do not plan) to make it larger:

Item	Actual area		Planned area (ha)	
	Property (ha)	Land lease (ha)	Property (ha)	Land lease (ha)
Courtyard				
Plough land				
Permanent grassland				
Other land				
TOTAL				

In case of being qualified to the project, I declare that:

1. I will use the received financial support to build the household manure storage following the designs approved by the PMU and under the supervision of the expert designated by the PMU;
2. I will use the constructed facility in an appropriate manner;
3. I will make my farm accessible for demonstration purpose and monitoring activities connected with the project.
4. I am ready to sign a GRANT AGREEMENT with the PMU in a form acceptable by the World Bank

Date:

Signature:

Approved by the Comuna Council:

Approved by the Project Coordination Committee:

Approved for financing by PMU:

Romania
Agricultural Pollution Control Project

**Grant Agreement to be drawn up between a Farming Association or Individual Farmer
with a Large Livestock Unit, and Project Management Unit (PMU)**

GRANT AGREEMENT No.

By and between: the Farming Association (or individual farmer) of
Represented by.....

And the Agricultural Pollution Control Project represented by:

On defining mutual commitments and responsibilities for implementing the manure management system component (with respect to larger livestock units) of the “Agricultural Pollution Control Project” financed from the funds of the GEF and from local and central governments, with participation of the project’s beneficiaries.

Article 1

This Agreement shall be part of the Agricultural Pollution Control Project, hereinafter referred to as “the Project” implemented by the Ministry of Waters and Environmental Protection on behalf of the Government of Romania and the Global Environment Facility.

Article 2

The object of the Agreement is the construction on the Association/Individual’s farm territory of the manure storage and handling facilities as designed by the Association/Individual’s consulting engineers and approved by the PMU.

Article 3

With respect to the provision of manure storage facilities and handling system, the Association/Individual shall be committed to the following:

1. To provide the PMU with the design and costing for the proposed solid waste and/or slurry handling system.
2. To obtain the necessary permit(s) for construction of the facilities mentioned in Article 2 of the Agreement by (date)
3. To make available land for construction of the aforementioned facilities within the date set forth by the Supervising Engineer appointed by the PMU.
4. To cover% of the total cost of the investment in compliance with the approved Cost Calculation for the amount being the equivalent ofROL.
5. To use the facilities in appropriate and adequate manner in compliance with the principles set out in the Operating Manual, and following an environment-friendly system for handling the collection, storing and spreading of manure.
6. To make the manure storage facilities accessible for quality measurements of surface and ground waters by the Environmental Protection Inspectorate (EPI) as well as for

organised visits, presentations, research and controls planned for in the project, for 5 years from completion of the facilities.

- 7. To keep simplified accounting records according to the templates delivered by the PMU.
- 8. To develop a utilisation plan for the manure and inform the PMU of this plan.

Article 4

With respect to the provision of manure storage facilities and handling system for the Association/Individual, the PMU shall be committed to:

- 1. Review the design submitted by the Association/Individual and agree any proposed modifications with the Association/Individual for the required manure storage facility and agree on facilities to be financed from the Project funds in compliance with the approved Cost Calculation.
- 2. Select the Contractor for construction of the works in accordance with the project procedures.
- 3. Cover% of the total cost of the investment including construction of the facilities described in Attachment 1, in compliance with the Cost Calculation attached thereto, in the amount being equivalent ofROL
- 4. Pay the amounts mentioned in item 3 directly to the Contractor, in compliance with the provisions of the agreement signed between the PMU and Contractor following the completion of the bidding process and award of contract.

Article 5

Facilities constructed by virtue of this agreement shall become the Association/Individual's property on completion.

Article 6

Should the Association/Individual fail to fulfil the conditions mentioned in Article 3, the PMU may claim reimbursement of the investment provided for the construction of the facilities mentioned in Article 4, item 3, of the agreement with pertaining interest.

Article 7

The Agreement is subject to termination in writing by any party giving one month's notice. In such a case, the party to terminate the agreement shall reimburse the other party all the cost incurred by that party.

Article 8

All matters not regulated in this Agreement shall be governed by the Civil Code.

Signed on.....in.....

For the Comuna.....

For the PMU.....

Endorsed by the County Council.....

ROMANIA
Agricultural Pollution Control Project

Registration No.:

CERTIFICATE OF COMPLETION

Date:

Name: Personal Code

Village: Comuna:

Telephone no.: Agreement no.:

1. This Certificate is not a certificate of technical quality. It can be used only in relation with the Grant Agreement signed between the Comuna and the PMU.
2. The object of Certificate is to certify completion of the household manure bunker as provided in the Agreement mentioned above.
3. Following the inspection of the construction we confirm completion:

- Without reservations

- With reservations listed below

4. Failures:
.....
.....
.....
.....
.....

5. Other comments.....
.....
.....
.....

6. Deadline for remedy
.....

7. Signatures:

Supervising Engineer

Farmer

Name:

Name: