

## **ENV-T-3**

### **Educational Video**

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## 1) Summary

### **LIFE FROM WATER**

#### *DOCUMENTARY- EDUCATIONAL VIDEO ON THE PATOS LAGOON AND MIRIM LAKE*

Are we all aware of the importance of water, as well as the importance of preserving the environment and life? Many municipalities are located in the basins of the Patos Lagoon and Mirim Lake, which are inhabited by more than a million people. Rio Grande and Pelotas, the main urban centers of the region, shelter half of this population. The two main cities of the southern part of the State generate thousands of commercial activities; hundreds of industries and a hundred thousand households are concentrated in these areas.

This whole interaction bears a strong impact on the region's natural environment. The region generates thousands of tons of waste and millions of liters of wastewater daily. Unfortunately, no waste and wastewater measures are adopted.

In Pelotas and Rio Grande, household wastewater are discharged into sewers and watercourses mostly without treatment into the lagoon.

Combined, the basins of Patos Lagoon and Mirim Lake measure more than 66 thousand square kilometers; bigger than the water bodies of many countries. The Lake of Peixe and the wetland of Taim, important ecosystems for reproduction of migratory birds, is also a part of this system.

Rice is the main agricultural product cultivated in the region; rice production in the region occupies the bulk of national rice production. Due to the absence of environmental control measures, however, this agricultural activity is the main reason behind deforestation, soil erosion and contamination of the basin from agricultural chemicals.

There are many examples of work in the region that aims to enhance public awareness concerning the importance of conserving, protecting and improving the environment. The main one is jointly carried out by more than 20 governmental and non-governmental institutions, together with the "Programa Pro-Mar de Dentro", which promotes the sustainable development of the ecology in the basins of the Patos Lagoon and Mirim Lake.

An international cooperation agreement signed between the governments of Rio Grande do Sul and Japan made the implementation of the Study possible. The Brazilian counterpart and the Japan International Cooperation Agency (JICA) regularly collect samples of the lagoon water and soil for analysis.

Ten percent of the world's sweet water reserves are in Brazil. The basins of the Patos Lagoon and Mirim Lake are an important and invaluable part of these natural reserves. International organizations are keeping alert in case a water supply crisis occurs worldwide in the near future as a direct consequence of the deteriorating state of the planet. Of the 151 countries surveyed Brazil ranks sixth in terms of having a large number of endangered species.

The above conditions only further underscore the significance of enhancing public awareness regarding the importance of environmental preservation and the need for immediate actions to protect and preserve water resources life on this earth is largely dependent on.

Produced by the Study Team  
Japan International Cooperation Agency  
(JICA)

As part of

"THE STUDY ON THE ENVIRONMENTAL MANAGEMENT OF THE HYDROGRAPHIC BASIN OF PATOS  
AND MIRIM LAKES IN THE FEDERATIVE REPUBLIC OF BRAZIL"

Cooperation:

State Government of Rio Grande do Sul  
Secretariat of Coordination and Planning  
Programa Pro-Mar de Dentro

## 2) Video Script

### **“A VIDA PELAS AGUAS” (“LIFE FROM WATER”)**

VIDEO	AUDIO
<b>OPENING</b>	<b>OPENING</b>
Computer graphic. A graphic representation of the globe and thick clouds (ozone layer). A view of South America, Brazil, Rio Grande do Sul, region of Pelotas and Rio Grande, and the waters of Patos Lake.	The graphic representation is accompanied by background music.
	OFF
Leftover food, running faucet, woman washing the dishes, detergent and soap draining into the sink. Water lowing through the pipe under the kitchen sink.	Lunchtime is finished. Now Ms. Maria is washing dishes.
	OFF
A man looking at a clock in his office. The man makes a phone call and afterwards reads through documents.	It is 2.00pm in the afternoon. Dr. Antonio just arrived at his office on the other side of the city. The Inspection Office is demanding the installation of anti-pollution equipment at the manufacturing plant, and Dr. Antonio is calculating the cost of the installation.
	OFF
View of the sky. A fishing boat in a sunny afternoon. A fisherman eating his lunch (the camera takes a closer look at the fisherman's lunch).	Spring has arrived bringing beautiful sunny afternoons.  Mr. Luis expects to be lucky and have a good catch today.
	OFF
A farmer is examining his rice production. Agricultural chemical sacks inscribed with warnings as to the toxicity of the product. The farmer is taking a look at his field.	Farmer, Luis Osorio, is thinking of a good price for rice... This year he harvested 800 hectares of rice and wants to recover his loses in the past years, when imports decrease the price of rice.
	Passage with musical sound OFF
<ul style="list-style-type: none"> <li>• The screen shows the people that previously appeared on</li> </ul>	What do all these people have in common? Either way, concerns are related to one substance:

<p>the screen.</p> <ul style="list-style-type: none"> <li>• Watercourses and a river.</li> <li>• Computer graphic representing water content in human body.</li> </ul>	<p>WATER, essential element for any alive being. Ourselves, we are composed of 65% of water. The water that occupies three quarter of the surface of our planet gave origin to all existent life in the Earth.</p>
<p>Water, pollution, birds, fish. A lake.</p>	<p>Are we all aware about the importance of water? Further, do we give any importance to the protection of the environment and life?</p>
	<p>(Noises generated in a city, sound of cars, port of Rio Grande)</p> <p style="text-align: center;">OFF</p>
<p>People's moving in the streets of Rio Grande and Pelotas, scenes of the Port of Rio Grande, general views.</p>	<p>50 municipalities exist in the Patos Lagoon and Mirim Lake basins, and this region is populated by more than a million people. Rio Grande and Pelotas, the main urban centers of the region, shelter half of this population. The two main cities of the southern part of the State generate thousands of commercial activities; hundreds of industries and a hundred thousand households are concentrated in this part of the region. These conditions have a strong adverse impact on the regional environment. Thousand tons of waste and million liters of wastewater are generated daily and no proper countermeasures are taken for these problems.</p>
	<p style="text-align: center;">OFF</p>
<p>Ms. Maria washing the kitchen sink; wastewater flowing into the sink; the interior of the pipe from the kitchen sink.</p>	<p>Let us return to the beginning of this video and see what Ms. Maria is doing. She already finished washing the dishes. The water used in the washing flows through the pipe. The family lives in a neighborhood where a sewerage system exists.</p>
<p>City, buildings and views of water canals. Pollution details. Pipes draining. Point where the waters are discharged in the lake.</p>	<p>In Pelotas all household wastewater are discharged into the Patos Lake through the sewers without treatment. Wastewater is discharged into open canals called <i>Torpedao</i>, in Santa Barbara, <i>Pepino</i> and <i>Arroyo</i> in Pelotas before they are discharged into the Patos Lake.</p>
<p>Emission points in Rio Grande next to a refinery.</p>	<p>The same conditions prevail in Rio Grande. Wastewater is finally discharged into the Patos Lagoon through such canals. Look at the color of the water. This is a permanent source of irritation to the residents who use these springs.</p>
	<p style="text-align: center;">(Vignette of Passage) OFF</p>
<p>A graphic representation of the sewerage system and house-pipeline-treatment plant.</p>	<p>By the way, do you know how a sewerage treatment system works? The existing household sewers convey the wastewater to the external pipeline. Grease traps</p>

	<p>and/or septic tanks filter out the solid matters from the wastewater, and this process is called settling or sedimentation. The wastewater is then directed to the treatment plant through the pipeline where it is stored in large tanks.</p> <p>Wastewater is then chlorinated before it is discharged into the river.</p>
	OFF
Fishing boat heading ashore with only a small catch on board.	Mr. Luis is sad. It has not been a good day for fishing. He is returning home with only a small catch, a condition that has been frequent of late. He is remembering the days when fishing was easy and the catch was plentiful, and when fishing was the main economic activity in the region.
Interview with the fisherman	Interview with the fisherman
Fishermen's poor settlement.	The village of fishermen has no electricity, water supply and sewerage system, and waste collection services. Fishing is the only means of survival to the residents of this area and those in other similar areas in the region.
Old market in Rio Grande.  Fish market in Rio Grande.	This property in ruins used to be the center of economic activities in the region. This used to be the fishing market of Rio Grande. Now the market is not thriving as it used to in the old days.
Industries	Today, fishing is not as significant to the economy of the region as it used to be. However, the life of the people still depends on the water that is very rich and of multiple use.
Fishermen in Colonia do Pontal.  General views.	The fisherman, the manager, the housewife and the farmer, or better yet all of us are responsible for our environment; at the same time we cause and become persons and victims of environmental imbalance and social exclusion.
Fisherman arriving with catfish.	This fisherman talks about the prohibition of catfish fishing during the prohibition period. (Fisherman talks about the catfish). These prohibition periods are fundamental to guarantee that fishing can be carried out for a long period. In the case of the catfish, although this is not the ovulation period of the catfish, the mature catfish comes for reproduction. Protection against its capture exists.
	(Vignette of Passage) OFF
Wetland, sub-aquatic scenes with diving camera. Birds and local fauna.	The wetlands, common in this region, are the basic source for the generation and preservation of aquatic life. Accompanying this biologist who makes a survey

<p>A biologist collecting minnows with a mesh. A closer looks at the samples.</p>	<p>on fish species, it is obvious that this wetland is rich in living organisms.</p>
<p>A view of Laranjal, subdivisions, drainage, lands submerged in water.</p> <p>The last subdivision whose development was interrupted by environmentalist.</p>	<p>The beach of Laranjal in the Patos Lagoon is one of the most beautiful beaches of the State. A huge part of this beach used to be a wetland. The urbanization of the area started with the development of subdivisions after the wetlands were drained.</p> <p>The lack of inspection and inefficient enforcement of relevant laws and the conniving nature of public authorities are the main reasons why these important natural resources are getting destroyed. An environmental movement in the region fights to stop the further development of the wetlands into subdivisions, and to uphold and respect environmental laws.</p>
	<p>Interview with ecologist</p>
	<p>OFF</p>
<p>Wetlands in the area. Rainfall on water pit.</p>	<p>Great part of the aquatic life of the lagoon originates in the wetland areas. In rainy days the wetland regulates the volume of water to be absorbed.</p>
<p>Flooding in the city (the video clip was provided by TV Pelotas/Rio Grande).</p>	<p>Without this regulating action, flooding occurs and problems become insoluble not only for the authorities but the residents as well. Flooding conditions are aggravated by waste thrown in the streets, as these block rainwater flow and clog drains as well.</p>
	<p>OFF</p>
<p>An eroded area and waste.</p> <p>A view of the extremities of a pipe receiving wastewater from a sewer canal on the other side.</p> <p>Water gushing out from an eroded area.</p> <p>Views of other eroded areas.</p>	<p>The house is on sale. It will be difficult to get an interested buyer. The enormous brook located at the side of the house continues to expand threatening the collapse of the garage.</p> <p>A few meters from the house are another brook, which is nearly 10 years old and endangers the life of nearby residents. These brooks are dangerous because of erosion and the inadequate design of the urban drainage system.</p>
	<p>(Vignette of Passage) OFF</p>
<p>A manager at his office.</p>	<p>Dr. Antonio continues with the legal demands. He needs to install filters in the factory to prevent further damage to the environment. Dr. Antonio is not the only one that is reacting this way.</p>
<p>Industries in Rio Grande</p> <p>A view of how smoke emitted by</p>	<p>Many industries are concentrated in Rio Grande, and most of them are established without the implementation of environmental impact</p>

<p>fertilizer manufacturing factories pollutes the air.</p> <p>A village in the proximity of the factory.</p>	<p>assessment. The problem, however, is not simple. The industries are important to the economy of the region. Their proximity to important water resources, however, puts the environment at risk. Preventive measures will be necessary to prevent ecological and social damages.</p>
	<p>(Vignette of Passage) OFF</p>
<p>School involved in separate collection.</p> <p>Waste separation activities.</p> <p>The mixed disposal of wastes, e.g. organic and dry wastes.</p>	<p>Separate waste collection is not carried out regularly in the barrios of Pelotas and Rio Grande. The activity on screen right now involves schools and environmental organizations, and is held in "Casa de Jesus" in Pelotas.</p> <p>Separate collection is actually not carried out in the entire state. Organic waste, e.g. kitchen waste, garden and animal wastes, are disposed together with dry waste, e.g. paper, plastic, glasses, cans.</p>
<p>Waste disposal site of Rio Grande; the site is located close to the Patos Lagoon.</p> <p>A compactor truck carrying its daily rounds of collecting waste in streets.</p> <p>Mixed organic and dry wastes.</p> <p>Wastes and the lagoon.</p>	<p>These all depict how the environment has deteriorated, as well as degraded living conditions.</p> <p>Not many people are aware that such conditions prevail at the disposal site of Rio Grande.</p>
<p>Leachate draining.</p>	<p>Wastes collected by the municipality are discharged in the open dumpsite located at the shores of Patos Lagoon.</p> <p>The scavenger disputes each waste truck. The children survive on what they can recover from the dumpsite.</p> <p>The absence of sanitation policies also affect the Patos Lagoon, which is gradually being contaminated by leachate – a toxic liquid resulting from the decomposition of waste.</p> <p>The more polluted the lagoon becomes, the less economically valuable fishing in the region is likely going to be.</p>
<p>Waste disposal site in Pelotas. Compactor trucks discharging wastes.</p>	<p>Also in Pelotas, the waste disposal site does not fully abide by the environmental legislation. Nonetheless, the situation is less serious.</p>

<p>Bulldozer compacting and burying wastes. Retainer lagoon. View of canal in the proximity.</p>	<p>Waste is covered with earth. Leachate is treated in these lagoons. The disposal site is located next to an urban area and a watercourse, putting the environmental quality of the surroundings at risk.</p>
<p>A slum built around the waste.  Pigs in the waste. Animals foraging through the waste.</p>	<p>Inappropriate treatment of waste brings about diverse environmental and social problems. Slums are formed next to waste disposal areas.  Can you just imagine the type and number of diseases that these animals foraging through the waste can transmit to the residents of the entire area?</p>
	<p>(Vignette of Passage)</p>
<p>Recycled wastes</p>	<p>Do you know that an important part of these leftovers can be reused? This is made through recycling. See what she makes with the old plastic.  These piles of cans can be reused. A used glass can be reproduced into something new.</p>
<p>Graphic representation of an equipment which reproduces wastes (waste is entered on one end and the reproduced product is discharged on the other end).  Used cans.</p>	<p>Recycling and reuse are ways to ensure the sustainable use of the environment. These measures also mean less pollution.  Protect nature!  Look: 50 kilograms of old paper can be recycled into new paper, thereby avoiding the cutting of one tree. A thousand kilograms of used aluminum can prevent the extraction of five tons of minerals.</p>
	<p>(Vignette of Passage)</p>
<p>Aerial views of Patos Lagoon.  View of the Taim wetland.</p>	<p>The area coverage of the Patos Lagoon and Mirim Lake is bigger than the water bodies of other countries, as it measures more than 66 thousand square kilometers. UNESCO considers the Lake of Peixe and the wetland of Taim as an asset to mankind as they serve as important ecosystems for the reproduction of migratory birds.</p>
<p>Aerial views of rice paddy field.  Views of cultivated areas. View of grains and rice sacks. Sacks of agricultural chemicals inscribed with warnings about the product toxicity.</p>	<p>Rice is the main agricultural product in the region; rice production in this region makes up a huge part of the national production. Increased cultivation and the lack of appropriate environmental countermeasures, however, lead to deforestation, soil erosion and environmental contamination due to the use of agricultural chemicals.</p>
<p>The harbor of Rio Grande. Piers. Flock of seals. An ecologist counting the seals.</p>	<p>Rio Grande. Piers of the harbor.  Until recently, these seals were hunted and killed because they destroy fishing nets. Today, they are</p>



	monitored and protected under the supervision of NEMA (Nucleus of Environmental Education and Monitoring), with headquarters in the beach of Cassino.
An environmental education class.	The Environmental Education Project of Sweet Water Sea (PROMAD), of CEA (Center of Environmental Studies), carried out together with a local school, was awarded the best environmental education project in Latin America by Latin American Federation of Environmental Education.
	Interview with ecologist
Toys made from recycled waste. An instructor on toy making.	This workshop on toy making using recycled waste is part of the project, "Adopt a School", created by SANEP (Service Agency of Pelotas for Water Supply and Sewerage Treatment). Here are trained teachers of environmental education in schools in Pelotas.
Patos Lagoon. A view of polluted conditions.  Staff working with works schedule, survey, laboratory, control, etc.  Work in the motorboat "Larus" of FURGS.	There are many examples of work carried out to enhance awareness, promote the protection and improvement of socio-environmental conditions in the region. One of these, Mar de Dentro, is carried out under the joint cooperation of more than 20 governmental and non-governmental institutions. This is the program "Mar de Dentro" that intends to promote the ecologically sustainable development of the Patos Lagoon and Mirim Lake basins. An international cooperation agreement signed between the Brazilian and Japanese government made the implementation of this program possible. The Japanese agency in charge is the Japan International Cooperation Agency (JICA).
Water area. Scenes showing large water bodies.	Aboard the boat-laboratory "Larus" of FURG, experts of the University Foundation of Rio Grande, the Program "Mar de Dentro" and the JICA, regularly collect water and soil samples from the Patos Lagoon for analysis.
Beautiful scenes of water bodies.  Children.  Patos Lagoon.	Ten percent of the world's sweet water reserves are in Brazil. The Littoral Hydrographic Region formed by Camaqua, and the "Litoral Medio" and Sao Goncalo/Mirim basins where the Patos Lagoon and Mirim Lake are located, are an important part of these valuable reservations. The non-governmental ecological organizations have prepared themselves for quite some time to cope with water crisis. Now, international organizations are also sitting up and taking notice of the possibility of a water supply shortage taking place at a global scale in the near future.  Water resource conditions are directly affected by

	<p>the current socio-economic conditions that lead to the accelerated degradation of our planet. Of the 151 countries surveyed, Brazil ranks sixth in terms of having a large number of endangered species.</p> <p>International movements for environmental protection advocate the importance of proper environmental education measures and eradicating of poverty. The successful implementation of these measures greatly rely on everybody's cooperation, in order to attain an ecologically sustainable development in view of employment generation, income distribution, improvement of socio-environmental conditions, to create a healthy and beautiful planet for the present and future generations.</p>
Final scenes	Looking above and at the space around us, man discovered that our planet is blue. A life that is blue and borne from water.

### 3) Questionnaire of the Video

The interview survey was conducted to know the opinion of the audience of the video produced for educational use in workshops, seminars, schools, etc. and with the objective to raise awareness on the inhabitants of the hydrographic basin of Patos Lagoon and Mirim Lake.

This interview survey was conducted on 70 persons (among 100 participants) after the presentation of the video in the workshop implemented in Vila Sao Miguel in Rio Grande. 83% of the interviewees were students between 8 to 16 years old, and 17% were adults (mothers, teachers and members of NGO's). The survey was conducted using the following questionnaire sheet:

#### QUESTIONNAIRE OF THE VIDEO

Name:		Age:		Sex:	
Occupation:		Institution:			

#### YOUR IMPRESSION OF THE VIDEO "LIFE FROM WATER"

Please indicate your opinion of the video marking the corresponding box:

<b>What is your opinion of the video?</b> (Select only 1 answer)	Poor	Fair	Good
<b>What is your opinion of the video?</b> (Select 1 or 2 answers)	Boring	Interesting	Educative
<b>Was the duration of the video appropriate?</b> (Select only 1 answer)	Short	Sufficient	Long
<b>Which items of the video have caused bigger impression?</b>  (Select the items according to your consideration)	Solid waste	Wastewater	Industrial pollution
	Agricuilt. - chemical	Erosion	Deforest.
<b>Were there some other items besides those mentioned?</b> (Mention in the following boxes)	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>
<b>Did you understand the message of the video?</b> (Select only 1 answer)	<input style="width: 100%; height: 20px;" type="text"/>		<input style="width: 100%; height: 20px;" type="text"/>
<b>Does the video help to raise awareness on the importance of the environment for quality of life?</b> (Select only 1 answer)	<input style="width: 100%; height: 20px;" type="text"/>		<input style="width: 100%; height: 20px;" type="text"/>

If you have answered NO in the last two questions or you have other comments of the video, please specify here:


Thank you very much for your cooperation