

FOREST EDUCATION PROGRAMMES PROPOSED BY THE NATIONAL FOREST ADMINISTRATION-ROMSILVA IN PARTNERSHIP WITH SPECIALIZED UNIVERSITIES AND OTHER STAKEHOLDERS (2nd PART)

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Abstract

National Forest Administration-Romsilva consistently makes a sustained effort in maintaining and developing a policy of permanent awareness of the young generation on the importance and sustainable management of forests, ensuring their continuity for the future generations, combined with the need to use renewable forest products. The paper addresses two forest education programs proposed by National Forest Administration-Romsilva to preschool and primary school students.

Keywords: forest education, awareness, sustainable management, standing crop, biodiversity, target group

INTRODUCTION

The general **purpose** of these programs: to promote the specific activity of Romsilva National Forest Administration (the only administrator of the state forest fund - 48% of all the forests in Romania) and the role of the forestry staff in ensuring continuity and sustainable management of the national forest fund.

The activities proposed within the programs have the role of learning, informing, acquiring skills, awareness, sensitization, involvement and curiosity.

The **general objectives** had in view in the elaboration of the educational programs are: the transmission of the information in order to acquire the knowledge about the forest and the way of its administration; developing a proactive attitude towards the forest as an ecosystem and developing a responsible attitude of the civil society towards the environment; carrying out practical *indoor* and *outdoor* activities to set the knowledge and develop the skills of the target audience.

MATERIAL AND METHOD

In order to implement these programs, it is necessary **to go through the following stages**: training the staff within the forestry departments connected to the target groups for each educational program; signing partnerships with school inspectorates / schools / children's palaces, museums, local authorities, NGOs, etc.; establishing the topics to be developed. The main topics addressed are described in detail in this paper for the two categories of target groups (preschoolers and children in primary school).

As well as the **working methodology**, the following steps will be considered: drawing up a calendar of activities; contacting the target groups; ensuring the logistics related to the activities; preparation of the teaching materials (power-point presentations, videos, cartoons, colorful pictures, stories, riddles, curiosities, interactive games, contests, etc.); indoor and outdoor activities (excursions on themed routes, guided field trips, practical demonstrations, interactive actions, team games, workshops, therapeutic walks in the forest (forest bathing), etc.); involvement in field volunteering with forestry specialists; monitoring the quantifiable results from both a quantitative (number of activities, meetings, etc.) and a qualitative (feedback questionnaires) point of view; dissemination of results in the local media and social networks, as well as the allocation of a budget at the level of the forest administration in order to implement the forestry-educational activities.

Program 1 - Little friends of the forest (addressed to the target group - kindergarten children);

Program 2 - Let's get to know the forest (target group – pupils in the primary school);

The **results** had in view after applying these programs are: *training the future generations to know general notions about forestry and to understand the role of the forester in ensuring the continuity of the forest; promoting the profession of forester and the fact that National Forest Administration-Romsilva is a reliable partner.*

One of the educational programs addressed to preschool students (kindergarten children) (Seghedin, 2019) is presented below.

Name of the program: P1 - Little friends of the forest (presentation made at the International Symposium - *Forests and Education. The activity of foresters in forest development and protection - a means of education in the spirit of respect for the forest*, 2019, Romanian Academy, Bucharest)

Target group: kindergarten children

Main competences: learning, information, skills, awareness, sensitization, involvement

Table 1

Program P1 - details

Secondary competences/ skills			
What should children feel?		What should children do?	
<ul style="list-style-type: none"> - joy; - safety; - freedom; - communion and integration with nature / forest; - love for nature (animals, plants) / forest; - involvement; - accountability 		<ul style="list-style-type: none"> - to be aware that someone is taking care of the forest; - to pass on educational messages to parents (education of parents through children); - to protect; - to use the wood products responsibly / to recycle; - to love animals and plants (games); - to be aware of the role of trees and the forest in human life; - to be curious about everything related to the forest; - to behave appropriately towards the forest. 	
Allocated time: maximum 25-30 minutes for actions organized in the classroom (presentations, games)			
Topics addressed in the P1 program:			
<ul style="list-style-type: none"> - What is the forest and what does a forester do? - How to grow a forest? (the path of a forest, from seed to tree); - Forest nursery - gardens for forest seedlings; - Species of animals, plants and trees. Curiosities about forest flora and fauna. 			
Locations	Didactic Methods	Sent Messages	Allocated Budget
<ul style="list-style-type: none"> - forest administrations; - forest districts; - forest nurseries; - national and natural park administrations; - kindergartens; - museums; - cultural and educational centers. 	<ul style="list-style-type: none"> • experiments; • games, • riddles, • poetry, • conversations, presentations, • films, drawings / paintings on various topics • thematic excursions -Exhibits with the forest etc 	<ul style="list-style-type: none"> ✓ <i>Know the forest!</i> ✓ <i>Love the forest!</i> ✓ <i>Protect the forest!</i> ✓ <i>Take care of the forest!</i> ✓ <i>The forest - man's friend!</i> ✓ <i>Support the continuity of the forest!</i> ✓ <i>Keep a civilized behavior in the forest!</i> ✓ <i>Do not set fire in the forest!</i> 	<ul style="list-style-type: none"> • National Forest Administration-Romsilva infrastructure • purchase of educational materials (books, games, boards) transport, etc.

The **first theme** of the P1 program aims to convey to children information about **what the forest is and what is the role of the forester in the life of the forest?** This will be achieved through a series of activities specific to this age category, which are presented in a summarized manner below.

Table 2

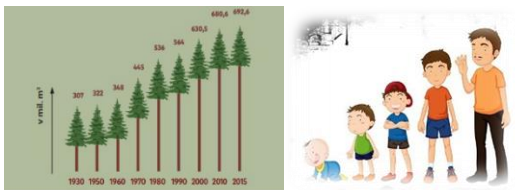
The objectives and activities specific for P1 program

Objectives	Examples of activities
1. Transmission of information and acquisition of knowledge on: - What is the forest (classifications, examples); - The role and functions of the forest; - The importance and conservation of the forest.	- presentations * .ppt / video - maximum 3 minutes (forest = multiple source of resources), various drawings (differences between a coniferous and deciduous forest, cones, seeds, fauna, animal tracks), forest sounds (animals, birds, water, rain, storm, etc.).
2. Carrying out practical activities and workshops that contribute to the personal involvement of children in forest-related activities: -the importance and benefits of the forest in our life, what would our life look like without wood? -identifying the resources we can find inside the forest. Differences between tree species, classifications.	- dialogue - the composition of the forest, biodiversity, the difference between species, the human-nature relationship, what is a tree (component parts), the succession of seasons; stimulating the imagination, presenting curiosities, riddles, stories. -participation of children in team workshops, involvement in educational games, discovery of the forest through the senses;
3. Acquiring a responsible and friendly behavior towards the forest and trust with respect to the forestry staff. -who takes care of the forest (the duties of a forester and his role); -the importance of maintaining and increasing the forest area, maintaining the health of the forest; - harmful factors (biotic / abiotic); -how we behave in the forest; how we orient ourselves in the forest.	- hiking in the forest to observe and collect plant material of different species of plants, trees (seeds, cones, stalks, leaves, flora, bark); themed excursions; - experiments and any other alternative methods; - open-ended questions such as: "How does a deciduous forest differ from a coniferous forest? What are the differences between beech and oak leaves?"

Theme 2 will focus on how a forest is grown, following its development from the seed to the tree stage, comparing the stages of a human evolution with the stages of a forest evolution (by using representative images).

Table 3

Theme 2 - details

Objectives	Examples of activities
1. Transmission of information and acquisition of knowledge on: - What gives rise to a forest? (seed = basic element); - the stages of development of a forest (comparison between the stages of a person's life and the stages of development of a forest); - what does it mean to regenerate a forest? How is a forest regenerated (natural, artificial, mixed)?	Practical games, presentation of different types of forest seeds, stages of forest development, the role of the forester in ensuring the continuity of the forest. Drawing contest on the theme of forest regeneration.
2. Acquiring information on the need to regenerate a forest.	 <p>The image contains two parts. On the left is a bar chart showing the growth of forest area in million hectares (mha) from 1930 to 2015. The x-axis represents years (1930, 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2015) and the y-axis represents area in mha. The bars show a steady increase: 307 (1930), 322 (1950), 348 (1960), 442 (1970), 526 (1980), 564 (1990), 635.2 (2000), 685.4 (2010), and 692.4 (2015). On the right is a line drawing of human evolution, showing a sequence of figures from a small, crouching hominid to a modern human standing upright.</p>

Theme 3 aims to provide information about forest nurseries, about the role and contribution of nurseries to ensure the continuity of a forest.

Table 4

Theme 3 - details

Objectives	Examples of activities
1. Transmission of information and acquisition of knowledge on: - what is a forest nursery?; - what happens and what is the role of a forest nursery ?; - how does the forest nursery contribute to ensuring the continuity of a forest?	- Visiting a forest nursery to discover the stages of seedling development; - Demonstration from an employee on how to plant the seeds / how to transplant/ how to plant?
2. Acquiring information about the species found in a nursery and how long it takes for the seedlings to be planted.	



Photo 1: Photo from a forest nursery within the National Forest Administration -Romsilva

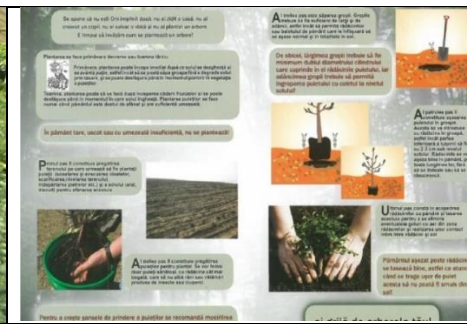


Photo 2 – Leaflet used in the afforestation actions

Theme 4 includes information on species of animals, plants and trees, involving presentations of the forest flora and fauna, including rare species of animals, social insects, plants and trees.

Table 5 Theme 4 - details

Objectives	Examples of activities
1. Transmission of information and acquisition of knowledge on: - forest flora and fauna.	-enumeration of the creatures from the forests specific to the area (min. 5 species from the flora and fauna of the area, using drawings, videos, riddles); - What animals and plants are protected in the area of activity of the forest administrations? Why do we have to protect plants, animals, trees?
2. Involvement of children in simple techniques for recognizing plant and animal species.	- Presentation of curiosities from the life of different species. Did you know that ...? Forest = animal house. Social insects (honey bees, red forest ant, wasps). About beekeeping, how to get honey? The little beekeeper's kit.
3. Educating the love for nature and respect for biodiversity and the integrity of habitats.	- organization of a contest for the recognition of flora and fauna species; contest - drawing plants or trees, leaf colors in different seasons, etc. - organizing practical activities in the field; presentation of some behavioral rules in the forest - to list the activities carried out by the forester for the care and protection of animals. Specify the shelter of each animal and its favorite food. - reciting poems about animals. Riddles.

Name of the program: P2 - Let's know the forest (Seghedin, 2019)

Target group: primary school children (0-IV)

Main competencies: learning, informing, skill acquisition, awareness, sensitization, involvement, curiosity, application in practice of the theoretical knowledge, development of civic sense.

Table 6

The objectives and activities specific for P2 program

Secondary competences			
What should children feel?		What should children do?	
<ul style="list-style-type: none"> - joy - Safety - freedom, recreation - communion and integration with nature / forest - love for nature (animals, plants) / forest - involvement -accountability to the forest 		<ul style="list-style-type: none"> - to be aware that someone is taking care of the forest - to pass on educational messages to parents (parent education through children), to protect, to use wood by-products / to recycle responsibly, to love animals and plants (games) - be aware of the role of trees and the forest in human life, - to be curious about everything related to the forest - to behave appropriately in the forest 	
Allocated time: maximum 40 minutes for actions that take place in the classroom (presentations, games)			
Themes addressed in the P2 program:			
<ul style="list-style-type: none"> - What is the forest? Who takes care of the forest? The activity and the role of the forester in the care and development of the forest. - Forest regeneration. Stages of forest development. - Forest nursery - forest seedling source / seedling school - Species of animals, plants and trees. Curiosities about nature. 			
Deployment locations	Teaching methods	Messages sent	Quantifiable results
forestry departments, forestry districts, nurseries, national and natural park administrations, schools, kindergartens, museums, cultural and educational centers	-game elements, experiments, explanations, problematization, simple and interactive presentations (* .ppt); - teaching materials: forest seeds, cones, seedlings in different stages, plastic containers, exhibits representing the forest, animal mascots; videos, drawings / paintings on various topics, themed trips, visits to nurseries	<i>Know the forest!</i> <i>Love the forest!</i> <i>Protect the forest!</i> <i>Take care of the forest!</i> <i>Support forest regeneration! Plant now for Christmas!</i> <i>Keep a civilized behavior in the forest!</i> <i>Do not set fire in the forest!</i>	number of participants, number of educational institutions, number of articles / news, facebook views, number of proposed and developed projects, etc.

In 2019, within the National Forest Administration-Romsilva, the Open Doors Day program took place when 70 children were presented the activity of the institution, its employees and a series of practical *indoor* and *outdoor* educational activities took place (e.g. : my first herbarium - identification of tree species, leaf collection and herbarium elaboration; presentation of trout and some exhibits from the Posada museum (birds and naturalized animals from the country's forests), presentation of live pheasants - observation of their behavior in captivity, followed by the release of three pheasants), tasting of bee products produced by Neamț Forest Administration, drawings on asphalt and offering participation diplomas. This action had a positive impact among the children, who left with the desire to learn as much as possible about the forest and they also expressed their desire to spend as much free time in the forest fund. Simultaneously with the action carried out at the headquarters, the program was carried out at all 41 forestry departments and 22 national and natural parks subordinated to National Forest Administration-Romsilva.

This year, National Forest Administration -Romsilva elaborated and printed in a number of 13500 copies, the work - *Through the forest, the first steps - a forest education notebook* for preschool and primary school children, work disseminated to its units, in order to implement the two forest education programs presented above.

CONCLUSIONS

Considering the educational activities implemented over time among the two categories of target groups presented above, it was found that all children show involvement and a lot of curiosity in acquiring new knowledge in the forestry field. We can conclude that educational programs can only have a positive impact in acquiring a long-term forest awareness among the young generation, National Forest Administration-Romsilva demonstrating and wanting to maintain a permanent and transparent communication with all the stakeholders in implementing and developing all these initiated educational programs.

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