

INSTITUTIONAL DEVELOPMENT PLAN FOR THE NEXT 4 YEARS

SCIENTIFIC SWOT ANALYSIS

The scientific SWOT analysis, for the INCDPM, is presented in Table 3.1.

Table 3.1 INCDPM scientific SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Extended coverage of environmental challenges • National and international reputation, both at institutional and individual level, merging three scientific units with consolidated tradition in environmental issues • Unique capability to cover in a unitary manner the expertise in environmental issues, in Danube Delta and Black Sea problems • Robust relationships with the Ministry of Environment, other public and private entities • Dynamic managerial staff, combining experience, youth and determination • Sufficient number and professional excellence of the research staff in a large number of fields • Adequate infrastructure • Adequate remuneration for qualified expertise • Ongoing long-term projects, securing the budget and the research activity • Dissemination tradition 	<ul style="list-style-type: none"> • Insufficient experience of the research personnel in writing project proposals and in reporting the results in outstanding scientific publications • Fragile balance between experienced and young researchers in the Bucharest Headquarter • Financial constraints related to the historical evolution of the institute in the recent years • Cohesion problems between the researchers who have worked in the former institute and the ones recently employed • Cohesion problems between the three scientific units • Weak reaction at internal and external pressures • Weak connection between research staff and economic operators (Constanța subunit) • Insufficient motivation after obtaining the PhD degree (Tulcea Sub-unit)
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Dynamic environmental challenges in Romania • Emergent topics in environmental studies (i.e. renewable energy, green technologies) • Encouraging context for multidisciplinary approaches • Large market for environmental studies, both on short and long term • Increasing interest of private companies in developing partnerships, start-up and spin-off projects • Reinforcement of the international cooperation within specific research programmes and tenders (Framework Programmes, JRC, LIFE etc.) • Ongoing necessities to develop and update environmental national and EU policies • Increasing accuracy, temporal and spatial coverage of freely available environmental data (i.e. satellite products, digital elevation models) 	<ul style="list-style-type: none"> • Pressures from small companies, charging lower costs for similar activities • Pressure for publishing the results, inadequate for an institution (quasi)entirely self-budgeted in comparison with institutes entirely financed by the state • Economic crisis • Low influx of highly qualified experts in certain research fields • Constant pressure from international competitors activated in similar fields • Tendentious mass-media approaches and exaggeration of certain environmental aspects • Necessity of pre-financing certain projects • High level of load with projects (Tulcea Sub-unit) • The number of the research staff limited by the Governmental Decree constraints the possibility of development

SWOT analysis identifies general and particular problems in each research entity. To solve or reduce the negative effects that can disturb the good work of the institute, the following plan of action is proposed (Table no .3.2), taking into account both strengths and identified opportunities, as presented in table below:

Table 3.2 Overall action plan

No.	Weaknesses/Threats	Actions	Responsible	Deadline
1	Insufficient experience of the research staff in writing project proposals and in reporting the results in outstanding scientific publications	Mentoring and coordination by experienced researchers	Team leaders; Heads of Departments; Scientific Board	Permanent
2	Fragile balance between experienced and young researchers & Insufficient motivation after obtaining the Ph.D. degree	Recruiting of young members with research abilities and strategy of intrinsic and extrinsic strategy	Human Resources	1 year
3	Cohesion problems between the researchers & Cohesion problems between the three scientific units	Providing of stable and transparent atmosphere regarding performance criteria, promotion and stimulation	Human Resources; Scientific Board	Under execution at Bucharest and after 3 months at Tulcea and Constanta
4	Weak reaction to internal and external pressures & Weak connection between research staff and economic operators	Strategy for preventing disparagement actions and strengthening the capacity of dissemination and public relations	Institution management; Boards of Directors	Permanent
5	External pressures (mass media or small companies)	Public assumption of the obtained results and correct and in time information of the public opinion by own tools (web, papers, etc.)	Scientific Board	Permanent
6	Economic crisis	Strategy of avoiding financial barriers	Economic Department	2 years
7	The number of the research staff limited by the Governmental Decree constraints the possibility of development	Initiation of a HG amendment proposal which imposes the employees number	Board of Directors; Administration Council	1 year
8	Necessity of pre-financing certain projects	Attraction of private funds and building deposits for projects co-financing possibility or to be used as tenders or performance deposits	Board of Directors; Contracts-Plan Department; Economic Department	2 years

STRATEGIC SCIENTIFIC OBJECTIVES AND DIRECTIONS

The strategic objectives and directions of the National Institute for Research and Development in Environmental Protection (INCDPM) are circumscribed to the mission defined by the coordinating authority (Ministry of Environment and Forests) and they refer to scientific research and technological

advance in environmental protection issues. INCDPM's mission is to respond to the needs of the society related to environmental protection and sustainable development, both at national and international level. INCDPM develops complex activities in a large variety of themes, covering fundamental and applied research, tackling various time scales and spatial extensions, providing products and services to public and private beneficiaries. The strategic objectives (Table 3.3) and strategic (Table 3.4) directions have been examined and validated by the members of the Scientific Council of INCDPM.

Table 3.3 Strategic scientific objectives of INCDPM

Objective	Responsible	Deadline/development	Deliverables
Investigating and understanding the actual characteristics, the future variability and the relationships between different environmental elements and their impact on society	Scientific Council	Permanently	Semester reports
Monitoring and assessing the quality of various environmental components (air, soil, water)	Team Leaders	Permanently	Semester reports
Promotion and development of interdisciplinary researches covering both geosphere and biosphere elements	Scientific Council	Permanently	Semester reports
Bringing significant, innovative contributions to the development of new environmental technologies	Scientific Council, Team Leaders	Permanently	Annual reports
Promotion and engagement in new research directions	Scientific Council	Permanently	Annual reports
Maintain a balance between fundamental and applied researches and support the feedback relationships between the two approaches	Scientific Council	Permanently	Semester reports
Extend the researches at international coverage	Managerial Staff, Scientific Council	Permanently	Annual reports
Improving the knowledge of the driving forces that govern the marine ecosystem, under the climate change pressures	Managerial Staff, Sub-unit Constanța	Permanently	Semester reports
Developing fundamental and applied researches to support the scientific background for the management of the Danube Delta Biosphere Reserve	Managerial Staff, Sub-unit Tulcea	Permanently	Annual reports
Apply new environmental technologies for rehabilitation of habitats eligible for ecological reconstruction and for recovery of endangered species from the Danube Delta Biosphere Reserve	Managerial Staff, Sub-unit Tulcea	Permanently	Annual reports
Providing scientific background for harmonization of environmental policies applied in the Danube Delta Biosphere Reserve to EU Water Framework Directive, EU regulations related to NATURA 2000 network	Managerial Staff, Sub-unit Tulcea	Permanently	Annual reports

Table 3.4 Strategic direction of INCDPM

Direction	Responsible	Deadline/development	Deliverables
Consolidation of traditional scientific domains covered by the institute (i.e. assessment of air, water and soil pollution environmental engineering environmental policies Danube Delta coastal area of the Black Sea), and sustaining in-depth approaches	Managerial Staff, Scientific Council, Team Leaders	Permanently	Annual reports
Establishing of specialized teams working in new research directions (i.e. climate changes, biodiversity, natural and technological hazards)	Managerial Staff, Scientific Council	Semester	Annual reports
Providing scientific support for national and local environmental policies	Scientific Council	Permanently	Annual reports
Foster the scientific excellence by the permanent improvement of the professional skills of the research staff	Managerial Staff, Scientific Council, Human Resources	Permanently	Semester reports
Address integrative research questions by forming interdisciplinary teams, with the efficient exploitation of the resources of the three branches	Scientific Council	Permanently	Annual reports
Facilitate joint research projects between INCDPM and national/international partners	Managerial Staff, Scientific Council	Permanently	Annual reports
Significant improvement of the dissemination and visibility, by increasing the number of publications in international publications	Scientific Council, Dept. of Dissemination	Permanently	Semester reports
Create the scientific and infrastructure premises enabling INCDPM to become a research pole of interest at national and international level	Managerial Staff, Scientific Council	2013	Report
Create a scientific and technologic cluster of excellence coordinated by INCDPM and aggregating research units, education institutions, private stakeholders, NGOs and other interested parties. The cluster will develop environmental approaches to the actual and foreseen challenges, and it will represent a pool of attraction for efficient collaboration between various organizations	Managerial Staff, Scientific Council	2013	Scientific and technological cluster of excellence in environmental issues
Identifying and testing new technologies for the development of goods and services provided by marine ecosystems	Managerial Staff, Sub-unit Constanța	Permanently	Semester reports
Developing solutions and technologies for the sustainable development of marine activities	Managerial Staff, Constanța Sub-unit	Permanently	Semester reports

Table 3.4 – (continued)

Direction	Responsible	Deadline/development	Deliverables
Engagement in new research directions in life sciences, spatial planning, modelling of environmental factors from the Danube Delta Biosphere Reserve and sustainable use of natural resources and renewable energies	Managerial Staff, Team Leaders Tulcea Sub-unit	Permanently	Annual reports
Provide support for specialized teams for the development of goods and services provided by ecosystems of the Danube Delta Biosphere Reserve and the Lower Danube area	Managerial Staff - Sub-unit Tulcea	Permanently	Annual reports

The scientific priorities directions will take in account the fact that at the present there are a lot of on going projects. One of the 57 on going projects has the final date in 2017.

The INCDPM's strategy has 3 directions:

- to maintain the research capacity on the traditional directions for the next 4 years; this will involve a budget of 45% from the annual income,
- to develop new research directions and new domains with a 35% budget from the annual income,
- to develop the dissemination and improvement of the researchers with a 20% budget from the annual income; this involves intrinsic and extrinsic stimulants.

HUMAN RESOURCES STRATEGY

Mission of Human Resources Direction

Human Resources Direction has the mission to strengthen the institutional capacity of INCDPM and to support the mission of the Institute, through scientific research activities and technological development, developing human resource management activities.

Human Resources Vision

As a new institution, which should adapt and correlate three distinct organisational cultures/entities, the internal mechanisms of human resources are continuously growing with the goal to support the young in developing a carrier in research and of experienced researchers in ongoing activities.

Strategic Objectives

1. Specialists recruitment with the goal of sustainable development through youngsters: INCDPM focuses on attracting youngsters to develop a research career, but also attracting experienced persons. In the recruitment process INCDPM will avoid in any circumstances discrimination between researchers based on sex criteria, age, nationality or social origin, religion or faith, sexual orientation, language, disability, political option, economic or social condition.
2. Management improving and managerial skills development of the management staff
3. Mechanisms for effective human resources management and professional career development. INCDPM supports the development of researchers in all their career phases, whatever their contractual situation would be, including researchers with fixed-term contract. So, it will continue to support mentoring activities, which provides full support and guidance for personal and professional development of young researchers motivating and ensuring their professional (see

positive results from subunit Tulcea, where young researchers have been coordinated to achieve doctoral thesis by experienced colleagues). Equally important is judging merits, periodic performance assessment, importance of bibliometric indices (number of publications, patents, conferences participation etc.) in proper balance with a wide range of evaluation criteria, such as teaching, surveillance, team work, knowledge transfer, research and activities of public awareness management.

4. Improving employees' professional performances by designing and implementing effective training programs, with the purpose of supporting critical mass appearance in key areas for development of INCDPM. INCDPM will support, as a continuous professional development method for all the researchers, no matter their gained experience, updating their skills and competences through formal education, workshop participation, symposiums, conferences and e-learning.
5. Development of labour relations system. INCDPM will support the development of a climate of transparency, by the engagement of researchers in information, consultations and the decision bodies of the Institute, to protect and to encourage their individual and collective professional interests and to contribute actively to the work of the institution.

Equal opportunities between women and men / Gender Balance:

INCDPM promotes the balance between different genders among employees, supported by a policy rule of equal opportunities in the moment of interview and in the next step of the carrier, without affecting the competence and quality criteria.

From the diagnosis analysis on the human resource resulted a good proportionality between the report men/women, but this report distorts in the favor of women at administrative level and obviously at the leading part (73% women at 27% men).

This aspect has not created so far any problems for INCDPM, and the future does not provide any danger. When it comes to the age of researchers there is a normal proportion (15% with an experience under 10 years, 47% with an experience of more than 10 years and 37% with an experience of more than 30 years. This is when the danger of not transmitting the scientific knowledges acquired at Tulcea and Constanta subunits to the small number of young researchers appears. To avoid this to happen it is necessary the proposed Human Resources Strategic Plan, presented in the Table 3.5.

Table 3.5 Human Resources strategic plane

No. crt	Identified risk	SMART Solutions	Deadline	Comments
1	Research tem ageing	Program of young researchers recruiting	2013-2014	High risk at Tulcea and Constanta sub-units
2	Lack of experience in the case of the young researchers	Professional training program	Permanently	At all unities
3	Doubts regarding the possibility of professional promotion	Clear and unique procedures, on transparent institutions regarding the promotion	6 months	In the case of the subunits this deficiency exists
4	Extrinsic and intrinsic motivation unclearly procedural	Unique procedure in each institute regarding the procedure of offering different stimulations	6 months	At all entities
5	Lack of a professional administrative and social dialogue with the managerial staff	Establishment of the social analysis commission; Establishment of the disciplinary research commissions	3 months	At all entities for easy cases and unique per institute regarding the serious cases

MECHANISMS FOR STIMULATING THE APPEARANCE OF NEW RESEARCH DIRECTIONS

At present, INCDPM is engaged in researches covering numerous fields of environmental issues, i.e. air and water pollution, environmental technologies and development, waste, monitoring of various elements, modelling, deltaic and marine areas, climate change, biodiversity, natural and anthropic risk analysis. Nevertheless, the progress of the scientific interest, the societal priorities and the need to access funds push for a permanent alert regarding the new research directions. Based on the diagnosis analysis, it resulted in the following stimulating mechanism presented in Figure 3.1. Therefore, INCDPM is going to implement a strategy for identification and stimulation of the appearance of new research directions.

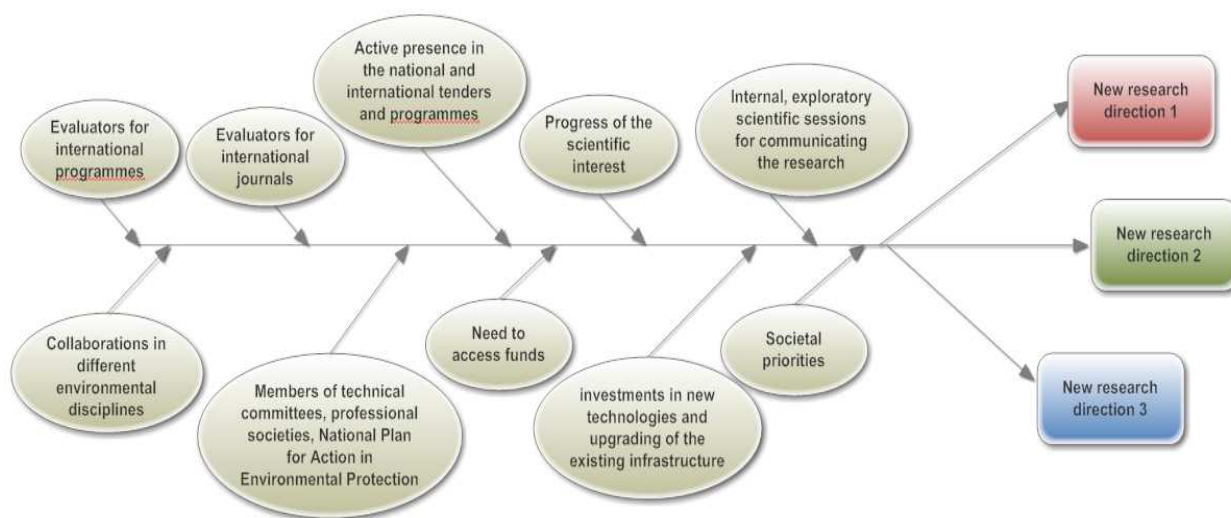


Figure 3.1 Strategy for identification and stimulation of the appearance of new research directions

Considering that the appearance of new research directions within the Institute represents a measure of the researchers performances that can appear at individual or group level, the management of the institute proposes the following Implementation Plan, Table 3.6.

For the next 4 years, the management of the institution will promote an internal stable environment, stimulating the collaboration between teams, quantifying the results through self-evaluation reports of their performances. The inherent and extrinsic motivation of the researchers involved in the identification of the new research directions/research funds will be taken into consideration. Periodically, INCDPM organizes internal, exploratory scientific sessions for communicating their research, in order to secure the scientific validation of the outputs and to promote further collaborations between different environmental disciplines, as a mechanism leading ultimately to new research directions. Within this action, young researchers are also involved in order to promote and stimulate them to confront with tasks that require their creative capacity at a higher level, but according to their specific training and their professional qualities.

The development of new research directions requires not only a solid scientific background and vision, but also investments in new technologies and upgrading of the existing infrastructure. In the very recent years, INCDPM acquired a few modern devices (ex: X ray sequential spectrometer SuperMini) and modern software (ex. ADMS-Urban for modelling air pollutants), and it is determined to allocate a substantial budget in order to sustain the infrastructure (each year 20%±5% of revenues for investments).

Table 3.6 Implementation plan

No.	Year/ Month	Actions	Responsibilities	Anticipated Results	Comments
1	1 (first year)/ -	Identification test for new research subjects and themes	Teams leaders	37 reports	Centralized Report to be made
2	1 / December	Scientific Board to analyse the report, offer a feed-back and propose corrections	Scientific Board	Feed back, Proposal for corrections	
3	1/ December	Simulation of the efficiency of the new proposed directions	Scientific Board	3 simulations	3 best reports will be selected
	2 / January	A new working procedure will be made, available and public for any researcher	Scientific Board, Quality Management Department	1 procedure	Available and public material for any researcher
4	2 ÷ 4 / -	Half-yearly, new research directions proposals from researchers will be analysed	Scientific Board	Reports and proposals	Open for any researcher
5	2 ÷ 4 / -	The realistic directions will be identified	Scientific Board, Plan-Contracts Department	Directions	Extrinsic stimulation of researchers with results
6	2 ÷ 4 / -	Necessary funds will be identified	Plan-Contracts Department, Economic Department	Financing funds	Programs or spin off or start up
7	2 ÷ 4 / -	New research teams will be created	Scientific Board, Human-Resources Department	Research teams	Inherent stimulation New team leaders

The active concern of INCDPM to stimulate the appearance of new research directions is reflected in the new structure diagram of the institution which was discussed and approved by the Scientific Board in November 2011, and it will become functional in the very near future. Two new departments will be established (Climate Change and Biodiversity) and consolidated in the next four years at Bucharest, confirming the necessity of consistent activities in new scientific directions.

FINANCIAL SWOT ANALYSIS OF INCDPM BUCHAREST

In Romania, INCDPM is the leader on the environmental research market, being the only specific national institute. The Institute has the advantage of having unified the experience of 3 well known institutes in the field of environmental protection: National Institute of Research & Development for Environmental Protection-ICIM Bucharest, National Institute of Research & Development for Danube Delta, INCDDD Tulcea and National Institute of Marine Research & Development Grigore Antipa, INCDM Constanta.

The financial SWOT analysis, for the INCDPM, is presented in Table 3.7.

The main objective of Research, Design and Innovation (RDI) is innovation and creativity added value, in the context of achieving the scientific objectives undertaken. But, they must be made in terms of financial sustainability, based on:

- Expenses below income;
- Identification of sources for pre-funding.

As a consequence of the financial SWOT analysis, the following Action Plan is proposed, Table 3.8.

Table 3.7 INCDPM financial SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ▪ Ongoing European projects with grant funding; ▪ Services contracts with implementation period longer than 3 years; ▪ Qualified research staff and financial management organized on project and activities ; ▪ Allocation from the institute's budget of funds for young researchers support ; ▪ Financial results of the institute and the existence of the external audit for each project; ▪ Setting up a new improvement strategy of the financial indicators at the taken contracts; ▪ Setting up a growth strategy of the payment period towards the suppliers; ▪ Diversification of the revenue sources and optimization of the utilities costs 	<ul style="list-style-type: none"> ▪ Legislative instability regarding the management of the research funds ▪ Lack of an informatics program at the level of the institute and of its 2 subunits; ▪ Staff fluctuation at the level of the Economic Direction; ▪ Weak collaboration with the 2 subunits from the financial point of view; ▪ Impossibility to create a cash-flow forecast for a period longer than 2-3 months; ▪ Payment delays of the clients; ▪ Computation equipments with high dynamic moral depreciation
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ▪ Elaboration of a work procedure with an unitary approach on the financial aspects at the level of the institute and its 2 subunits ▪ Identification of new diverse financing sources; ▪ Moral and material motivation of institute's staff; ▪ Establishment of an "umbrella" credit contract with low rates ▪ A more efficient policy on payment delays of the Beneficiaries ▪ Opening of the financial market by increasing the number of potential foreign investors interested in the Romanian coastal area and the Black Sea; ▪ Increasing the role of the internal auditor, as a control tool in meeting the financial terms of ongoing projects 	<ul style="list-style-type: none"> ▪ Lack of the state budget financing according to the statements of the Governmental decisions no. 1442/2009 (financial aid for investment costs) ; ▪ Existence of an external menace on the fixed assets; ▪ Lack of financial allocations from the state budget; ▪ Often modification of the specific legislation; ▪ Current national economic and social context; ▪ Increase of the financial blocking risk by delays (late payment of the claimed expenses) ▪ Drawback of appropriation from MMP for investments; ▪ Severe cuts of the amounts allocated for research from the budget; ▪ Decrease of demand studies till the budgets' approval

Table 3.8 Action Plan

No.	Weaknesses/Threats	Actions	Responsible	Deadline
1	Legislative instability & frequent modification of the specific legislation	Training courses for the economic staff	Human Resources Department	Permanently, according to the necessity
2	Lack of an informatics program at the level of the institute and of its 2 subunits and computation equipments with high dynamic moral depreciation	Investments in software programs	Financial Department, IT specialists from each unit	6 months
3	Staff fluctuation at the level of the Economic Direction and weak collaboration with the 2 subunits from the financial point of view	Implementation of a transparent and attractive strategy for the financial staff and clarification of the decision making process	Human Resources from each unit and subunits' financial directions	3 months

Table 3.8 -- (continued)

No.	Weaknesses/Threats	Actions	Responsible	Deadline
4	Impossibility to create a cash-flow forecast and Payment delays of the clients	Elaboration of a strategy that could prevent payments' delays and increase the cash-flow prevision	Planning and Contracting Department and Financial Department at all subunits	Permanently and is refreshing
5	Existence of an external threat on the fixed assets	Clarification of the field situations, of their enetring into the cadaster (land register) and their taking over by the institute	Planning and Contracting Department, Economic Direction, Law Direction, Managers Committee, Board Council	2 years
6	Lack of financial allocations from the state budget and financial aid for investment costs, drawback of appropriation from MMP for investments	Diversification of the attraction funds sources for easing the potential negative aspects	Planning and Contracting Department, Economic Direction, Marketing Direction, Scientific Council	permanently
7	Increasing the financial blocking risk through delays (late payment of the claimed expenses)	Creation of the umbrella contracts with credit with advantageous rates	Economic Direction from the sub-units and Board Council	1 year
8	Decrease of demand studies till the budget's approval	Elaboration of a maintenance strategy of the institute's activity during the precursory period of state budgets' approval	Economic Direction, Scientific Council, Managers Council	1 year

The situation of the INCDPM's venues, including its subunits, is presented in Table 3.9.

Table 3.9 Situation of the total INCDPM's venues

Year of projects completion / thousand euro	Year				
	2012	2013	2014	2015	Total
Bucharest Headquarter	1,741.670	3,414.070	0	0	5,155.740
Constanta Sub-unit	397.218	2,883.297	132.882	43.000	3,456.397
Tulcea Sub-unit	2,607.820	580.694	513.792	195.620	3,897.926
TOTAL	4,746.708	6,878.061	646.674	238.620	12,510.060
Investments estimated from trusted source 20%	949.3416	1375.612	129.3348	47.724	2,502.013

The data of the Table 3.9 demonstrates the fact that INCDPM can assure a secure venue with a high level of confidence in the first 2 years of about 60%, and for the last 2 years of about 25%, taking into consideration that there is a 6 years project.

INFRASTRUCTURE: INVESTMENT PLAN AND STRATEGY

INCDPM administrate significant infrastructure distributed to each of the three research units, adequately to its scientific mission and current activities. In order to accomplish the assumed strategic objectives and directions and to continue the present research, INCDPM has elaborated an investment plan and strategy for the next 4 years, Table 3.10. The financial resources to sustain the investment plan will come from budgetary basis and private investments, both from national and international sources.

Table 3.10 INCDPM's investment plan in infrastructure for 2012-2015

Strategic objective / direction	Action	Estimated cost (x10³ euro)	Financial sources	Deadline
Investigating and understanding the actual characteristics, the future variability and the relationships between different environmental elements and their impact on society	Purchase of new equipments & upgrading the existing ones; purchase off-road vehicles	500-700	Budget, Projects, Private	Upon necessity
Monitoring and assessing the quality of various environmental components (air, soil, water)	Equipment for collecting, storing and transmitting data; upgrading the mobile laboratories	500-700	Budget, Projects, Private	Upon necessity
Promotion and development of interdisciplinary researches covering both geosphere and biosphere elements	Purchase of new equipments & upgrade the existing ones	300-500	Budget, Projects, Private	Upon necessity
Bringing significant, innovative contributions to the development of new environmental technologies	Purchase of new equipments & upgrading the existing ones; equipment for testing technologies and simulating environmental processes; design and arrangements for the buildings	1500-2000	Budget, Projects, Private	2013-2015
Promotion and engagement in new research directions	Purchase of equipment adequate for new research directions	500-1000	Budget, Projects, Private	Upon necessity
Extend the researches at international coverage	Enhance the communication facilities	400-500	Budget, Projects, Private	2015
Create a scientific and technologic cluster of excellence	Purchase of new equipments; design and arrangements for the buildings	2000-2500	Budget, Projects, Private	2014
Improving the knowledge of the driving forces that govern the marine ecosystem, under the climate change pressures	Acquisition of marine research vessel; sampling equipment	4000-4500	Budget, Projects, Private	2015
Developing fundamental and applied researches to support the scientific background for the management of the Danube Delta Biosphere Reserve	Acquisition of fluvial research vessels; measurement technology	2000-2500	Budget, Projects, Private	2015

Table 3.10 – (continued)

Strategic objective / direction	Action	Estimated cost (x10³ euro)	Financial sources	Deadline
Apply new environmental technologies for rehabilitation of habitats eligible for ecological reconstruction and for recovery of endangered species from the Danube Delta Biosphere Reserve	Mobile laboratories and remote observation techniques; purchase of new equipments	500-1000	Budget, Projects, Private	2014
MONITORING THE ENVIRONMENTAL IMPACT OF THE WORKS REGARDING THE IMPROVING OF THE NAVIGATION CONDITIONS ON THE DANUBE RIVER BETWEEN CALARASI AND BRAILA	Alarm and control sistem for sturgeons	1000	Budget , Project no.53/2011	2012-2015

TECHNOLOGY TRANSFER AND THE ATTRACTION OF NON-PUBLIC FUNDS

INCDPM has a long tradition in the development and the transfer of environmental technologies towards private enterprises. The current activities of the institute imply a permanent contact with stakeholders, providing them different services (i.e. monitoring of air and water quality, laboratory analysis, professional development of human resources), products (i.e. studies, maps), and technological counselling. At the end of 2009, research units from Bucharest, Tulcea and Constanța merged and formed INCDPM, aggregating significant human resources and infrastructure, and enlarging the relationships with the private economical environment. INCDPM submitted 9 projects within the 2011 national call of the CNCS - PARTENERIATE, all of them including at least one private partner institution. These conditions produce excellent premises for technology transfer and attraction of non-public funds.

Technology transfer as a process designating the formal transfer to industry of the outputs resulted from INCDPM's research, for marketing in the form of new products and/or services, is a strategic objective seen as a communication process, which will lead to the introduction of the research results into practice or will represent new information. This transfer shall occur also by educational processes, through scientific literature or by direct contact with the operators.

The transfer of technology shall refer mainly to new patents, technical designs and models, manufacturing formulas, as well as non-proprietary technical support, such as know-how, action plans etc. INCDPM has started and will further carry on the creation of in specific project calls, in which private agents are willing to co-finance research activities and become partners in the process of patenting the new product. Start-up and spin-off projects represent a priority in respect of technological transfer and attraction of non-public funds. Another way of transfer is the creation of common platforms for conducting research of interest to companies (e.g. ROMPETROL) and the direct transfer of the results to the partners.

INCDPM plans to develop a significant area into technological facilities capable to respond to much diversified commands from the stakeholders. The area will be equipped with modern infrastructure, to be used for scientific experiments, for developing and testing prototypes for environmental technologies, and for simulating natural and anthropic phenomena. Such facilities will make easy the technological transfer to private stakeholders, and can be used as an **education platform as well**.

INCDPM aims to consolidate the promotion of environmental technologies towards stakeholders by creating a technological database, which should be presented and partially available on the web, in order to promote the capabilities of the Institute. INCDPM will constantly monitor the changes in environmental legislation and in the derived obligations for private and public entities and come to meet these obligations with solutions and proposals.

The strategy for draw non-public funds addresses several directions:

1. Sustained maintenance of the current activities resulted in deliverables (products and services) for private companies, securing permanently the quality of the outputs;
2. Creating scientific premises (consultancy and infrastructure) for innovations;
3. Identification and permanent updating of new economic markets as opportunities to orient INCDPM's research directions consequently;
4. Extending the activities at international scale;
5. Participation in research programmes and tenders in joint consortiums with private partners;
6. Development of strategic corporate alliances and partnerships with private stakeholders;
7. Training the managers and personnel from private institutions on environmental issues and suggesting opportunities for common actions towards innovative approaches for sustainable production;
8. Offering new innovative technologies for increasing energy efficiency and other environmental issues;
9. Developing of start-up and spin-off partnerships with private companies, to serve better their economic needs; the co-financing system and the direct involvement of the beneficiaries will stimulate the quality of the services, enhancing the institutional performances of INCDPM;
10. Presentations within specialized economic fairs and workshops and partnerships with central organizations of private stakeholders (i.e. National and Regional Chambers of Commerce; Employers' Federations'), and invitations addressed to private investors to participate at the workshops organized by the Institute.

A quantitative summary, of the technological transfer and attraction of non-public funds foreseen for the next 4 years, is presented in the Table 3.11.

Table 3.11 Potential non-public funds

No	Technological transfer deliverables	2012	2013	2014	2015	Comments
1	Patents	2	3	1	1	Minimum number of patents
2	Spin off projects	0	0	1	3	Mainly medium and large enterprises
3	Start up projects	0	1	2	1	Mainly SMEs
No	Non-public funds	2012	2013	2014	2015	Comments
1	Bucharest unit	20%	30%	35%	35%	From the total income
2	Constanța unit	10%	20%	30%	35%	From the total income
3	Tulcea unit	5%	15%	25%	35%	From the total income

STRATEGIC PARTNERSHIPS AND VISIBILITY: EVENTS, COMMUNICATIONS, COLLABORATIONS.

INCDPM aims at developing several strategic partnerships at national and international level, as it could be a resourceful mechanism to support the institution's development in the years to come. The partnerships will address the scientific areas of expertise in which the institute activates, such as complex monitoring, modelling and research in different environments (air, water, and soil), covering national, regional and local areas. The sub-units engage partnerships focussed on the Danube Delta and

marine research. INCDPM envisages three main categories of partners that could be involved in strategic partnerships:

- Coordinating ministry, other governmental institutions and local authorities;
- National and international research and education institutions;
- Private stakeholders.

INCDPM will strengthen the cooperation with the coordinating ministry, other governmental and local authorities by prompt responses to all the requests and by contributing to the environmental policies under development. In the recent years, the Institute has developed several projects for different ministries (Environment; Economy; Education), it has submitted common project proposals with local authorities (City Hall of Bucharest; Prefecture of Bucharest), and it has conducted research work for local institutions (Town Hall Ocna Mureş), forming relevant premises for further strategic partnerships.

INCDPM is developing a pool of institutional and individual experts in various fields of interest, and it strives to participate in tenders and research programmes together with stable partners. This will secure the solidness of partnerships, and it will consolidate the long-term collaboration. It is extremely important that the institute dedicates substantial efforts to maintain relationships with universities (University of Bucharest; "Politehnica" University of Bucharest; University of Natural Resources and Life Sciences, Vienna) and to create new ones, as a mean for professional training of the staff and for attracting skilled young researchers. In its turn, the Institute offers its infrastructure and personnel assistance for training students of different levels, mainly M.Sc., Ph.D. The sub-unit Constanța accessed to the Romanian Maritime Cluster (with 39 members so far, from business, academia, research and NGOs and supports national and international business structures - as a competitiveness pole), generating great conditions for developing further partnerships.

INCDPM is also intending to develop more and more partnerships with private companies, as potential beneficiaries of the results and co-financers of the researches. The Institute has a long tradition in cooperation with private companies, and some partnerships are decades old (ROMPETROL,OMV,Conversmin,Salina Ocna-Mures etc.). Several joint project proposals have been submitted within the [PARTNERSHIPS] in 2011. The mentioned background and the specific activities developed by INCDPM argue for strategic partnerships with the private environment.

A permanently updated list of the strategic partners is available on the INCDPM website.

The policy for continuous existence and development new institutional partnerships will eventually lead to a rising visibility of the institute within public, research, education and private milieu. However, INCDPM has planned an active strategy for direct improvement of its visibility. Moreover, the Institute has created recently (2010) a departmental structure responsible for supporting dissemination of the activities. The researchers are encouraged and fully supported to communicate the results and submit them for being published in significant journals. The Scientific Council of INCDPM supervises the papers submitted, in order to provide recommendations and to secure the quality of the publications. Regular announcements of scientific national and international events are distributed to the research staff. In order to improve the participation at events (conferences, research and development fairs etc.) and the publication frequency, a database will be published and permanently updated on the INCDPM website. The visibility of the institute will be also stimulated by encouraging the memberships in scientific societies. The Scientific Council will issue semester bulletins that will include the most recent publications and research projects of the institute.

The 4-year strategy for developing INCDPM strategic partnerships and visibility is also based on the development of joint researches between the teams from Bucharest, Tulcea and Constanța. The scientific journals published yearly in English by the sub-units Tulcea and Constanța secure a certain visibility of the research. Common publications and presentations of the researchers belonging to all the teams at scientific events are under development, and it will be actively extended in the immediate future. At the same time, INCDPM will organize annual scientific workshops that will complete the traditional conferences organized by the sub-units Tulcea and Constanța, dedicated to various scientific communities and involving the participation of private stakeholders.

To summarize, in respect of the strategic partnership and visibility, the institutional development for the next 4 years will achieve the main following goals:

- Maintain the present partnerships;

- Increase the number of relevant partners with 50% for each category (national and local authorities; research and education institutions; private companies);
- Increase the number of publications in ISI journals with 100%;
- Increase the number of publications in other peer-reviewed journals with 100%;
- Increase the participation at scientific events and exchange of experience and knowledges with 100%,
- organizing in the future their own two scientific events, namely: International Symposium “Deltas and Wetlands”, managed by Tulcea Sub-unit since 1992 (in 2011 was organized the XX-th edition) and International Symposium "Protection and Sustainable Management of the Black Sea Ecosystem, Third Millennium Imperative”, managed by Constanta Sub-unit since 2005 (in 2011 was organized the V-th edition)
- Increase the CNCSIS quota for two own journals, from C category to B or B+ Category in the further 4 years: **Marine Researchers Journal** (CNCSIS Code 74), edited by Constanta Sub-unit since 1971, in 41 issues; **Scientific Annals of the Danube Delta** (CNCSIS Code 1016), edited by Tulcea Sub-unit since 1993, in 17 issues.

Figure 3.2 presents a summary of strategic partnership and visibility plan.

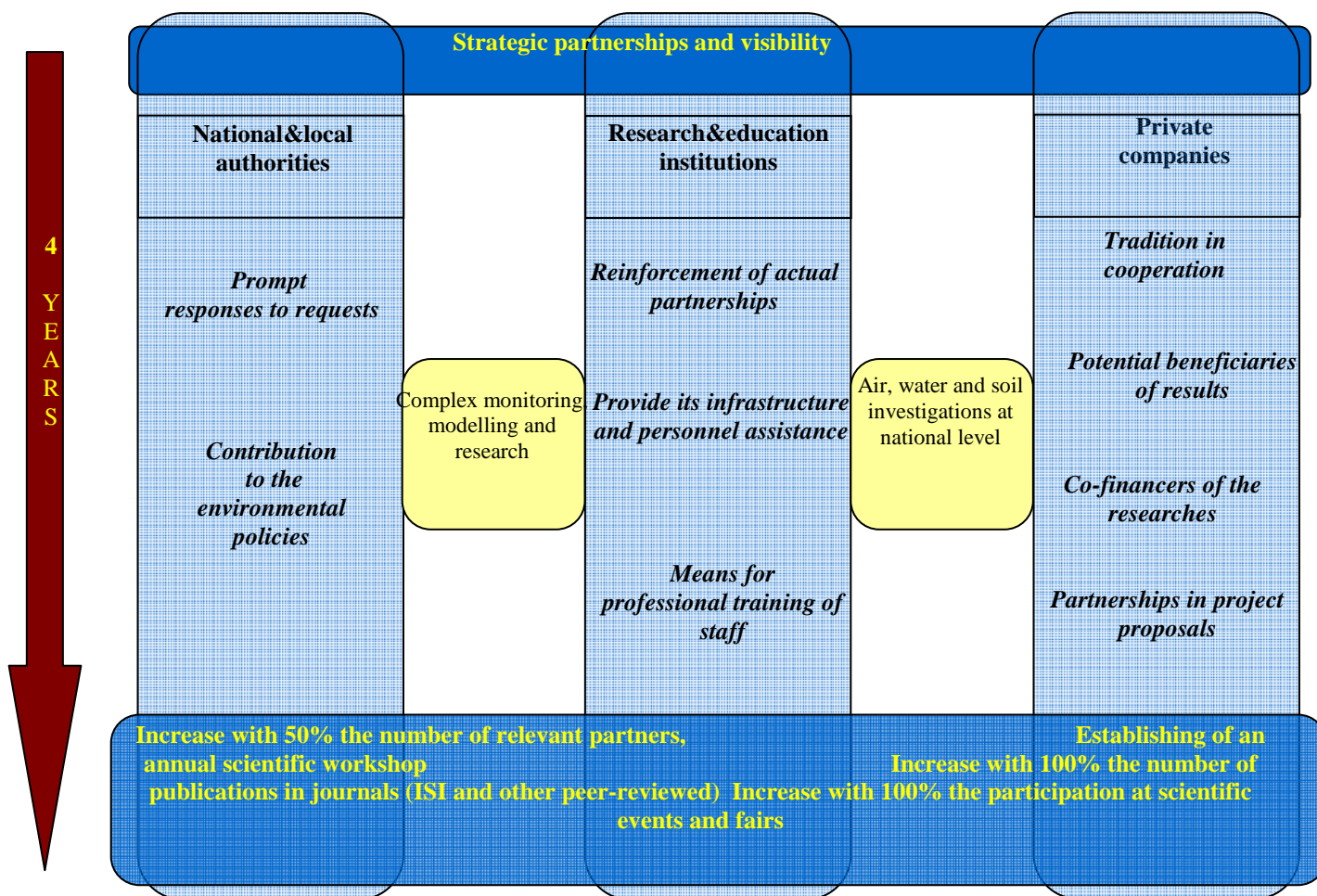


Figure 3.2 Schematic strategic partnership and visibility plan