



JUNTA DE ANDALUCIA

2006 - 2010  
STRATEGIC PLAN  
FOR HEALTH RESEARCH,  
DEVELOPMENT AND INNOVATION





**STRATEGIC PLAN FOR HEALTH RESEARCH,  
DEVELOPMENT AND INNOVATION  
2006 - 2010**



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In the context of Andalusia's firm commitment to the consolidation of a more modern and up-to-date region, the process of creation, management and interchange of knowledge and secondly the consolidation of democratic values and rights have established themselves as two of the driving forces behind our society's advancement.

One of the strategic objectives of the Ministry of Health of the Andalusian Regional Government (Junta de Andalucía) in this sense is to foster the generation of knowledge within the Andalusian Public Health System, in particular biomedical research.



Advancements in terms of knowledge and understanding of the development of diseases can generate innovation in terms of healthcare techniques and technologies, new medications and therapies, thereby undoubtedly contributing to improve the health of citizens. In keeping with this basic premise, the Regional Ministry of Health is responsible for promoting and directing biomedical research and its relation with citizens in every sense, from the emergence of ideas and the creation of knowledge through to the transformation of the same into innovation and application to new products and services, thereby resulting in health and progress for society as a whole.

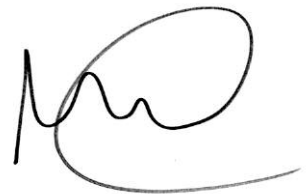
Under the Strategic Plan for Research, Development and Innovation for the period from 2006-2010, the Regional Ministry of Health has assumed a policy of biomedical R+D+I for Andalusia which is aligned with and co-ordinated by existing programmes at a European, national and regional level, and which includes all the parties actively involved in the innovation system.

Accordingly, it comprises a long-term project which also has far-reaching results, and with a start-up and general development which requires co-ordinated action by all Andalusian institutions linked with biomedical research and innovation, at all stages of the process from the first scientific outline through to the improvement of citizens' health and quality of life. Provided that biomedical research can provide Andalusia with important advances in terms of health and economic growth, a plan of this nature and with such major repercussions needs to be considered as a key element of scientific and technological policy in the autonomous region.

Moreover, the structure of the Strategic Plan for Health R+D+I for the period from 2006-2010 is a response to the articulation of biomedical R+D+I in its triple perspective: of resources, production and the transfer of research results, from which we derive the ten strategic guidelines which determine the actions to be taken at each stage of the process.

These ten strategies, which encompass the entire system of biomedical research and innovation, are directed towards consolidating the advances made in terms of infrastructures, organisational systems, the development of talent and creativity and the implementation of innovative therapies, etc. At the same time, their intention is also to establish new projects, promoting private initiatives and entrepreneurial culture in general; to continue the development of a regulatory framework which grants scientific tasks and their transfer due safety and guarantees; to increase the competitiveness of biomedical research and innovation in Andalusia at a European level; to increase support for research teams with management teams; to foster job mobility in the international and intersectorial ambit; and in general, to create ideal research conditions which enable Andalusia to convert itself into a bioregion within a horizon of four years.

For various years now, within the framework of policies for innovation and modernisation in Andalusia, the Regional Ministry of Health has assumed a firm commitment to continue its promotion of scientific knowledge and place itself at the forefront of high-quality research in the field of biomedicine and biotechnology. Examples include its support to stem cells research cellular, reprogramming for therapeutic purposes, clinical trials, pre-implementation diagnosis in Andalusian public healthcare centres and the creation of bodies such as the Andalusian Centre for Molecular Biology and Regenerative Medicine (CABIMER) and the Seville Institute of Biomedicine. Having reached this point, there can be no doubt that the Andalusian Public Healthcare System, as part of the Andalusian Knowledge System, will contribute in a decisive manner to the creation by 2010 of an Andalusian bioregion which is competitive in the context of biotechnological research and innovation in the EU, and which will enable important advances in terms of prevention, diagnosis and treatment at the service of citizens' health and quality of life.

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Mª JESÚS MONTERO CUADRADO

Minister of Health of the Andalusian Regional Government



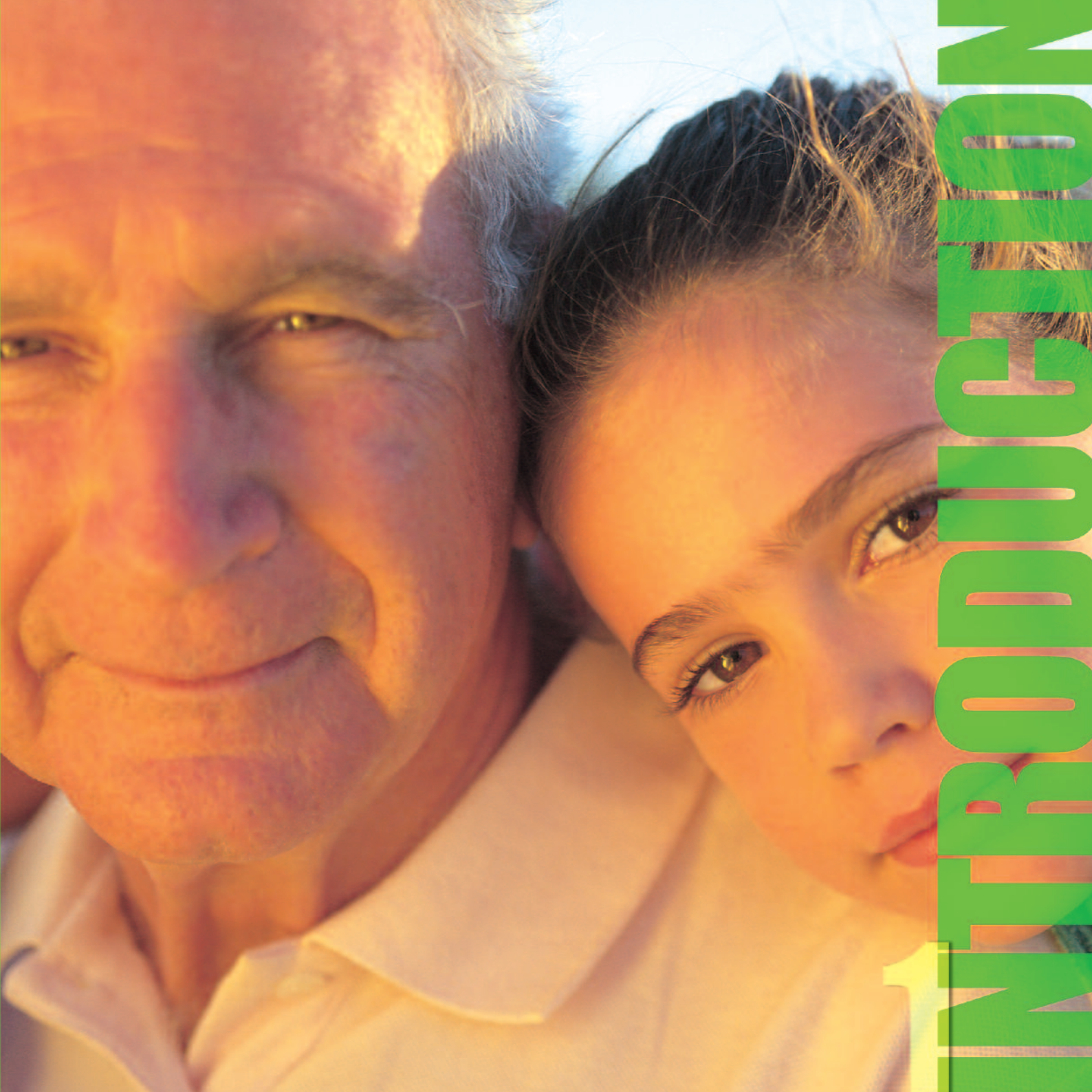


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# INTRODUCTION

1

In 2005 the Regional Ministry of Health presented the 2nd Quality Plan for the Andalusian Public Healthcare System, which was formulated with the clear intention of continuing and consolidating the quality policies and actions previously implemented. However, at the same time it also emphasised the development of a new and promising space for the progressive incorporation of a whole range of innovative quality initiatives to enable the continued provision of adequate responses to current and emerging needs and expectations.

The new scenario introduced by the 2nd Quality Plan places particular emphasis on the optimisation of the processes which facilitate the generation, capture, management and interchange of knowledge and its transformation into innovation, a key factor of competitiveness and development applicable to any current organisation and, accordingly, to the Andalusian Public Healthcare System (SSPA).

The SSPA is an organisation for the prevention, diagnosis and treatment of health problems affecting citizens. In accordance with this focus, the generation and management of knowledge needs to be directed towards fuller compliance with these objectives through its transformation into new products, services and processes which increase the quality of assistance, accessibility and customization of the system for citizens, and which offers better opportunities for the professional development of its workers.

Within this process of knowledge generation an essential role is played by biomedical research, understood as the convergence between basic and clinical research, epidemiology and bioengineering. Its impact for citizens should be considered not only in terms of health but also in terms of prosperity. The commercial developments deriving from biomedical research have positioned it as one of the most important factors of economic development in current societies, and a strategic element of major importance for the economic growth of the European Union in the coming years.

In recent years Andalusia has made a definitive commitment to biomedical research, converting it into a strategic axis of the Second Modernisation Plan for the autonomous region. This commitment has resulted in important efforts to provide infrastructures and material and human resources, and the promotion of innovative research lines through the development of an adequate legislative framework and financial aid for projects.

In accordance with the SSPA's objectives regarding knowledge management, and in the new framework of scientific - technological planning established at the regional, national and European level, a new approach is required to healthcare research strategies which enables the articulation of a Plan of a sectorial nature directed towards completing the cycle of the generation and capture of knowledge and turning it into innovation.

In this sense, the Plan presented here seeks to establish the principles of a form of translational biomedical research in Andalusia as main source of knowledge, and to establish the instruments for turning this knowledge into innovation. These will be instruments which take into account the fact that, in the globalised world in which we live, information and communication technologies enable the availability of information and the capture and interchange of knowledge in real time and from a multitude of different points all over the planet.

Andalusian healthcare administration is being called upon to play an important role in the process of generation of biomedical knowledge. In this context, the SSPA, in its capacity as a major producer of knowledge and a consumer of innovation, is an important actor in the Andalusian Knowledge System, the success of which is linked to the need for co-ordination and co-operation with the different actors which fall under its scope. This Plan is directed towards all of those actors.



The Plan's structure reflects the new weight which is currently assigned to development and innovation in strategic healthcare policies, as opposed to the more traditional focus based exclusively on the research component.

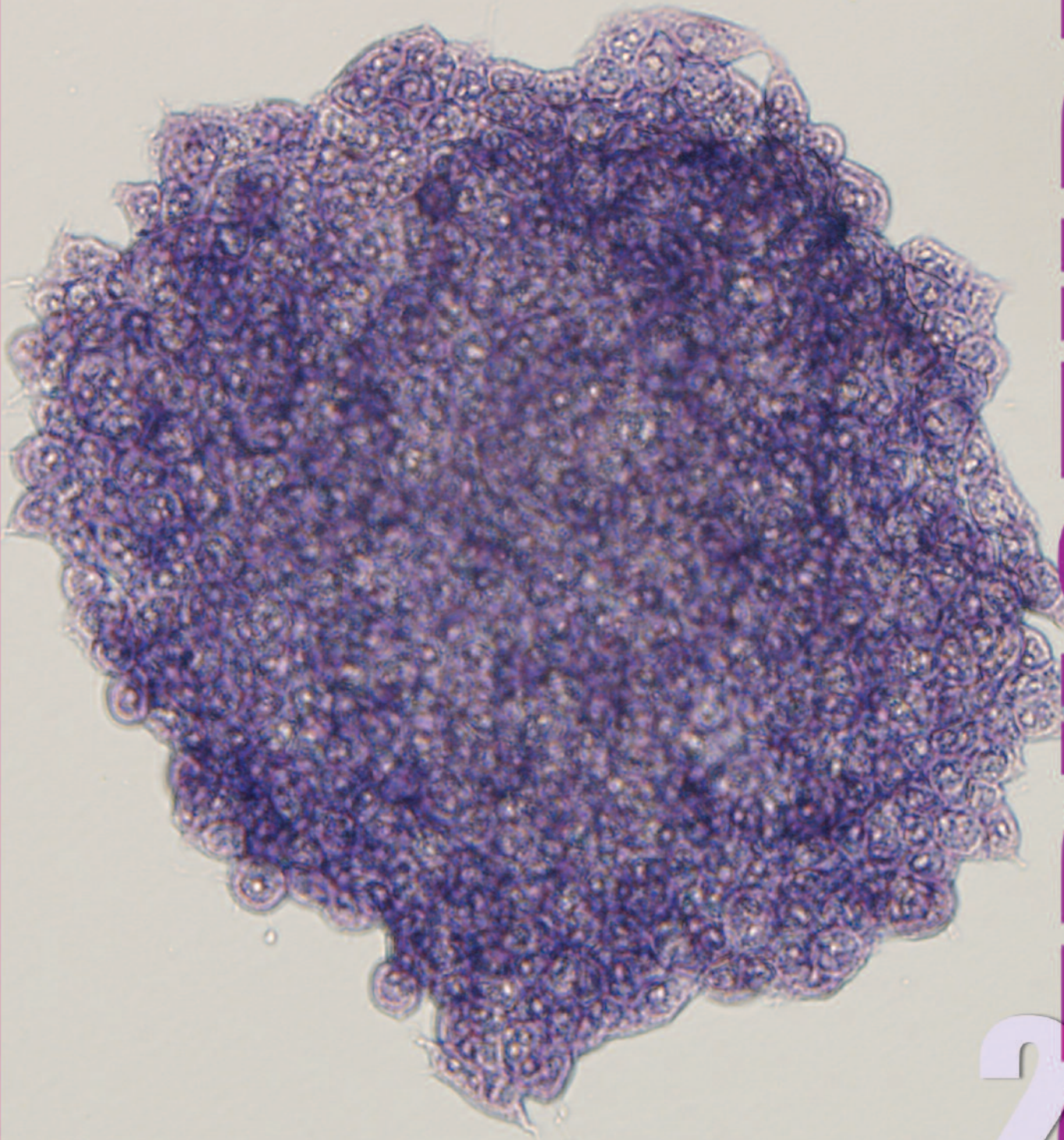
Taking this as its starting point, the Strategic Plan for Health Research, Development and Innovation is the result of a triple analysis. First of all, the results obtained from the Research Programme for the improvement of citizens' Health in Andalusia (PREMISA) have been considered, which served as a reference for the research policy of the SSPA during the period from 2001 to 2004. This study included the opinions issued during this period by the scientific and business community, as well as management and support staff. Secondly, an analysis has been carried out of the changes produced in the R+D+I environment during this period, which influenced the execution of the Programme itself and the current scenario. Finally, a prospective analysis has been carried out of expected trends for the coming years in terms of planning in this area, contained in various documents such as the Biomedicine Law draft, the Andalusian draft Law on Science and Innovation and the 7th Framework Programme for R+D+I of the European Union.











2 **STRUCTURE**

The Plan consists of a first part which proposes ten strategies of a transversal nature which, from an operative point of view, seek to achieve an improvement in the levels of excellence of the Andalusian R+D+I System in the field of biomedicine within a horizon of four years. The ultimate aim is to generate the necessary conditions for the creation of a bioregion, as an innovation system agreed upon by the SSPA, universities, companies and public authorities. This will enable the necessary integration of biomedical R+D+I in industrial policies with a scientific base, an essential condition for the viability of a biocluster.

Set out below is a definition of the different lines of action, which have been classified in three ambits in order to reflect the production stream of R+D+I in biomedicine. First of all, we define those lines of action directed towards granting the resources required in order to generate quality knowledge, which simultaneously serves the interests of the SSPA and the Andalusian Knowledge System. Secondly, actions are proposed towards the achievement of an increase in scientific production with respect to the priority lines in which Andalusia may develop competitive advantages. Finally, a special section is dedicated to technology transfer. This new approach proposes specific structures for the healthcare sector in addition to those already existing within the Andalusian Knowledge System. These will be supported by the general legal framework established under the Andalusian Draft Law on Science and Innovation and by specific developments for healthcare services which ensure both the harmonious and co-ordinated functioning of the different actors involved in the Science-Technology-Business System and the due recognition and protection of the knowledge generated within the ambit of healthcare administration.

Following configuration of the framework, the Plan is carried out through the establishment of Programmes of activities for each of the reference areas of the lines of action.

These Programmes of activities, with associated schedules and specific resources, will be generated based on the work of groups of experts to be established in the final quarter of 2006 and which will be required to present their proposals before the year's end. These Programmes of activities will form an inseparable part of the Plan and will be updated annually by the same groups of experts, thereby enabling adaptation of specific actions to the evolution of the environment.

In the first quarter of each year, the Department of Knowledge Quality, Research and Management will present a report to evaluate the degree of execution of the Plan for the previous year. This document will contain the measures necessary to correct any deviations which may be produced with respect to the objectives initially proposed. Following the termination of the period of application of the Plan, a final execution report will be prepared which will serve as the basis for planning in the following period.

The work scheme is as follows:

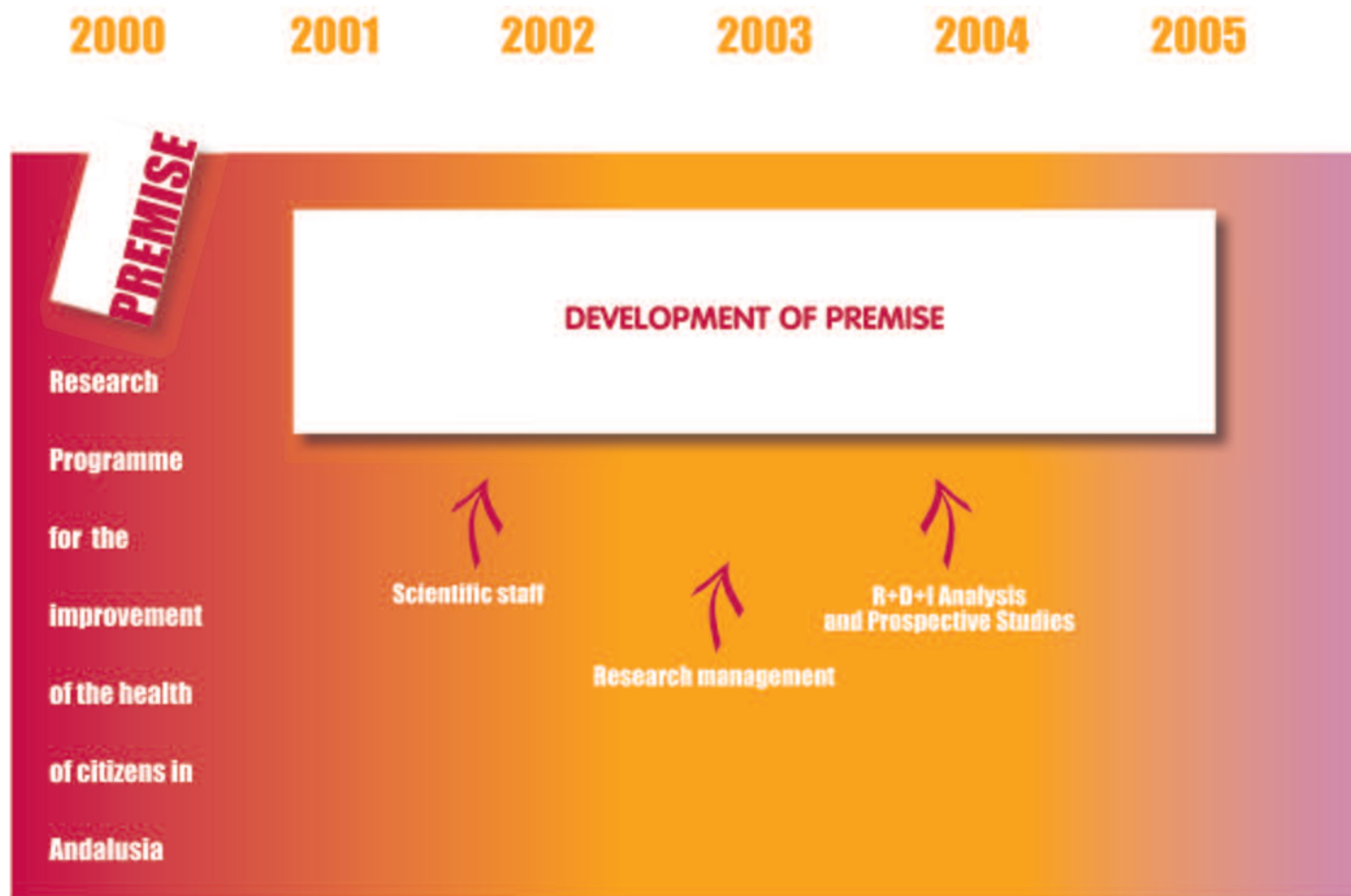


FIGURE 1: Plan Methodology

2006

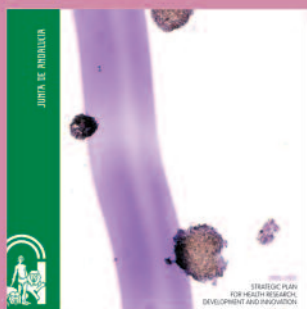
2007

2008

2009

2010

STRATEGIC PLAN  
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Andalusian  
Draft Bill on  
Science and  
Innovation

PIMA Plan for the  
Innovation and  
Modernisation of  
Andalusia

National R+D+I Plan 2004-2007

7th R+D+I Framework  
Programme of the EU

Operational development:  
annual programmes of activities  
Group of Experts

DEVELOPMENT OF RESOURCES

DEVELOPMENT OF PRODUCTION

TRANSFER AND DIFFUSION OF RESULTS



Annual reports

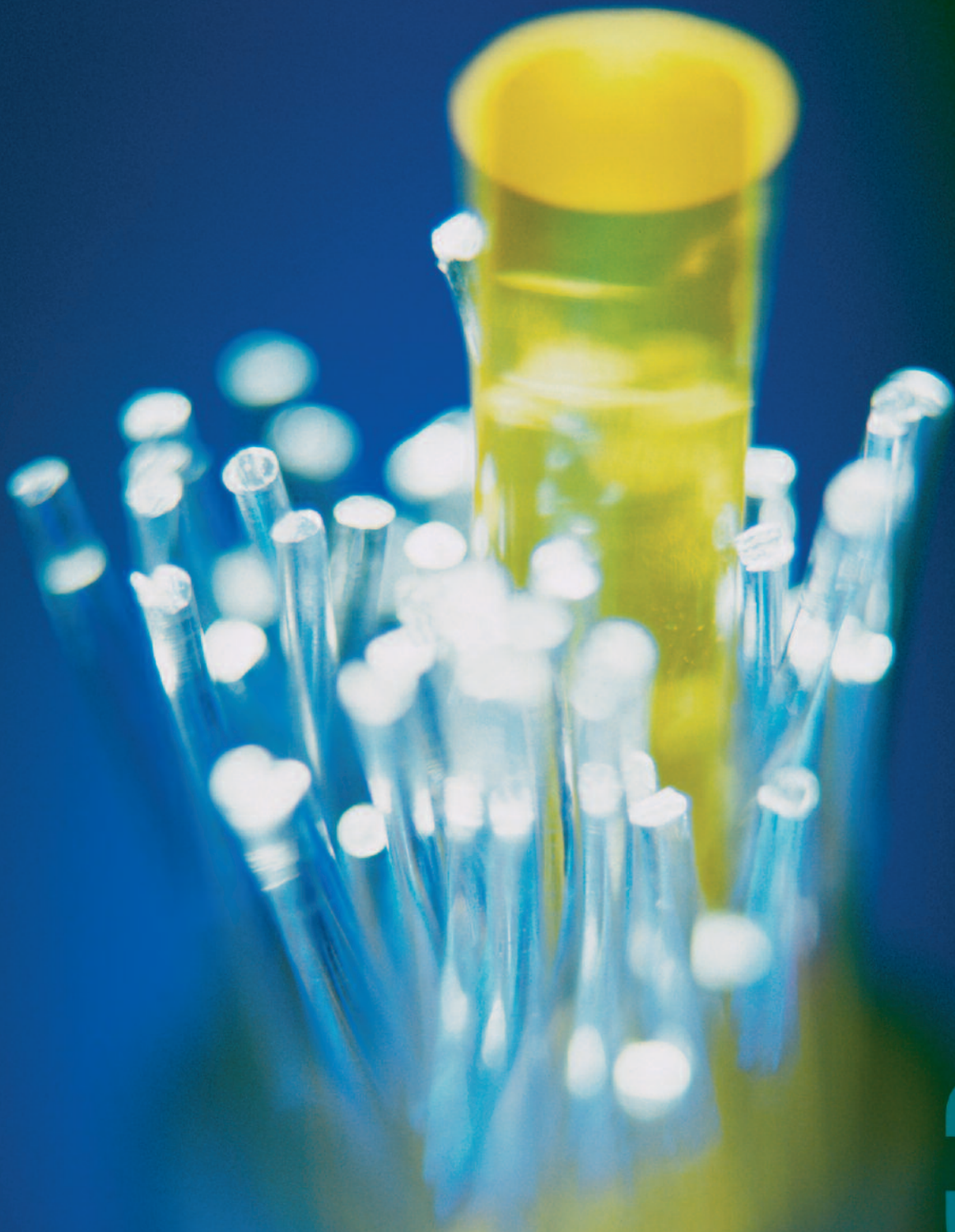
FINAL  
REPORT

Programme for evaluation of the Plan





# STRATEGIES





10 strategic lines have been identified, which determine the reference for the design and development of the lines of action presented in this Plan.

1. To promote the orientation of research, development and innovation activities carried out in Andalusia in the biomedical area towards resolution of the main health problems affecting citizens in the autonomous region.
2. To incorporate citizens in the planning process of R+D+I in the field of health, promoting their participation in decision-making processes and information and awareness-raising through scientific-technical activity.
3. To reinforce the culture of research and innovation in the SSPA.
4. To promote co-operation and the development of research and innovation networks between the SSPA and other actors in the Science-Technology-Business System with the aim of creating a Biomedical Subsystem organised into bioareas and bioclusters.
5. To contribute to the development of structures and channels for the management of knowledge generated in the SSPA, ultimately directed towards enabling its transfer to the business fabric, and accordingly, its transformation into social and economic progress.
6. To guarantee the complementarity of promotion actions for R+D+I activities carried out through the public health system with regional, national and European programmes, with the guiding principle of efficiency and effectiveness of actions in the global context.
7. To make advances in the development of the culture of evaluation of scientific and technological activity.
8. To strengthen the development of R+D+I of the highest level based on priority lines of action.
9. To provide the SSPA with the human resources required to develop the above strategies.
10. To guarantee the financial sustainability of the plan.

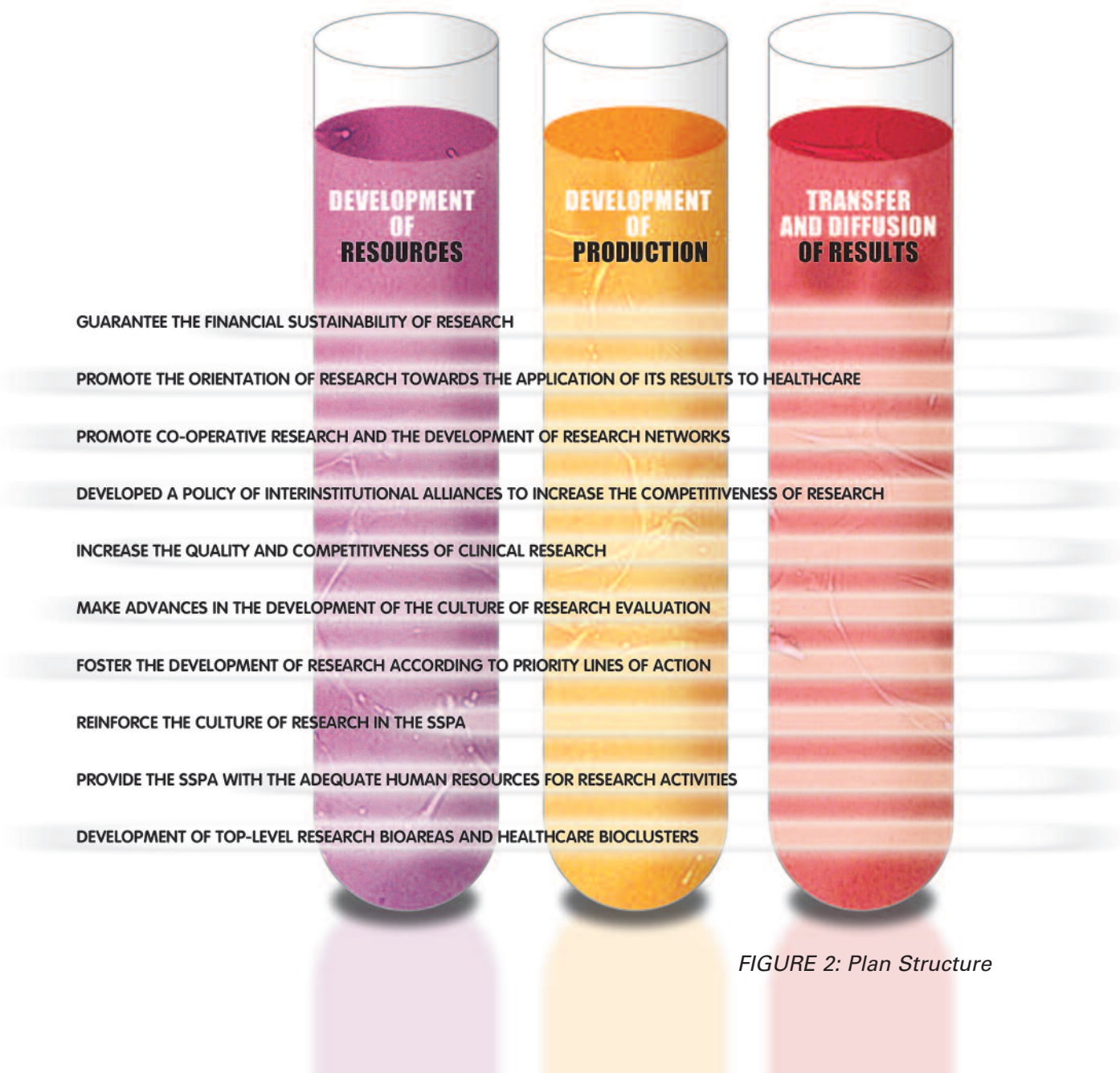


FIGURE 2: Plan Structure

## **1. PROMOTE ORIENTATION OF R+D+I ACTIVITIES TOWARDS THE RESOLUTION OF KEY HEALTH PROBLEMS**

Enabling consistency of the scientific and innovation activities we perform and promote through the Andalusian Public Healthcare System with the objectives defined in the Andalusian health plans, thereby strengthening the translational nature of research.

Society requests the large amount of basic scientific knowledge to be turned into improvements in terms of the diagnosis, treatment and prognosis of diseases. The aim of translational research is to apply the discoveries of basic biomedical science to clinical practice. This requires specific training and resources and entails the creation of new centres and research groups, and above all, an organisational model of healthcare, university and business institutions directed toward this objective.

## **2. INCORPORATE CITIZENS INTO THE PLANNING PROCESSES OF R+D+I AND PROMOTE INFORMATION AND AWARENESS THROUGH SCIENTIFIC-TECHNICAL ACTIVITY**

This strategy stems from the global strategy of considering citizens as the centre of the SSPA, with their opinions and the fulfilment of their expectations being the action principles of the system. In this context, it becomes necessary to approach the citizens to scientific activities and technological developments, promoting awareness and confidence as a factor of social and economic change. The dissemination of scientific activities must be carried out with the necessary care so as to avoid the generation of false expectations in the society.

### **3. REINFORCEMENT OF THE CULTURE OF RESEARCH AND INNOVATION IN THE SSPA**

The creation of new knowledge by professionals, its active dissemination and exchange and the innovative attitude for its transformation into improvements to healthcare services may not be considered as extraordinary or exclusive activities. On the contrary, research, training and innovation should form an inseparable part of the everyday assistance activities carried out by professionals. The aim is to raise awareness regarding the need to establish a dynamic of permanent improvement to the services offered through the generation and optimum management of knowledge, as an indispensable attitude for professionals in the Andalusian Public Healthcare System. In this way, the intention is to overcome the traditional view of healthcare centres by increasing their role in research and innovation.

### **4. PROMOTION OF CO-OPERATION AND DEVELOPMENT OF RESEARCH AND INNOVATION NETWORKS BETWEEN THE SSPA AND OTHER ACTORS IN THE SCIENCE-TECHNOLOGY-BUSINESS SYSTEM WITH THE AIM OF CREATING A BIOMEDICAL SUBSYSTEM ORGANISED INTO BIOAREAS AND BIOCLUSTERS**

This strategy is based on a consideration of the SSPA as an actor in the Science-Technology-Business System which interacts with the others, some of which generate knowledge, while others contribute to its management and others to its transformation into technology understood in its widest sense. Together with the SSPA, universities, research centres and companies complete this scenario in which none of the actors can effectively achieve the objective of the system on their own, without benefiting from the necessary co-operation and co-ordination of the remaining actors. This necessary co-operation is organised into three different types of structures.



First of all, the research centres and institutes resulting from alliances between the SSPA itself, universities and CSIC (Spanish National Research Council) with connections and defined projects with the biotechnological business.

Secondly, networks of research groups and centres as virtual structures for collaboration by research groups and companies, spread throughout the territory at an Andalusian, national and international level. Such networks are a must in view of the highly competitive, technified and multidisciplinary nature of the biomedical research, which implies that research excellence requires a sufficient critical mass and groups of a certain size which are competitive at a European level and capable of undertaking projects for transfer to clinics and industry. These networks should promote real interaction and collaboration between basic and clinical scientists and biotechnological companies, along with shared access to infrastructures and research services.

Thirdly, the bioareas and bioclusters, defined as geographic concentrations of biomedical research centres, health organisations, specialised suppliers, services, businesses and regulatory bodies associated with the health sector, which compete while at the same time also co-operate. In this way, these clusters act as an element for the combination of efforts and initiatives, enabling increases in competitiveness, optimising the scientific capacity of research and entrepreneurial development through the concentration of efforts of a commercial nature, and exploiting the environment of promotion and support provided by the public administration.

## **5. CONTRIBUTION TO THE DEVELOPMENT OF STRUCTURES AND CHANNELS FOR THE MANAGEMENT OF KNOWLEDGE GENERATED IN THE SSPA, ULTIMATELY DIRECTED TOWARDS ENABLING ITS TRANSFER TO THE BUSINESS SECTOR AND, ACCORDINGLY, ITS TRANSFORMATION INTO SOCIAL AND ECONOMIC PROGRESS**

The creation and development of structures which serve as vehicles for the free dissemination of knowledge is an unavoidable requirement for such knowledge to contribute to changes in society. In the ambit of healthcare, these structures perform as interfaces between the SSPA and the other actors in the Andalusian Knowledge System, and complement the functions of such bodies already existing in this system which pursue identical objectives.

## **6. GUARANTEE OF THE COMPLEMENTARITY OF PROMOTION ACTIONS FOR R+D+I ACTIVITIES CARRIED OUT THROUGH THE PUBLIC HEALTH SYSTEM WITH REGIONAL, NATIONAL AND EUROPEAN PROGRAMMES**

The increasing efforts by different public authorities in the sphere of R+D+I in recent years also require similar efforts in terms of co-ordination to ensure that all the global objectives are met. For this purpose, it is necessary to regard public administration as a global entity with different levels which perform in an autonomous while at the same time complementary way to ensure the achievement of common goals. Among other aspects, it is necessary to advance in terms of information exchange among all the entities responsible for research and innovation funding, so as to ensure the efficiency and effectiveness of the financial aid granted at a regional, state and European level, and to promote collaboration by research groups and companies.



## **7. ADVANCES IN THE DEVELOPMENT OF THE CULTURE OF SCIENTIFIC AND TECHNOLOGICAL ACTIVITY EVALUATION**

The quality of scientific and technological activity is directly linked to the achievement of objectives established a priori and the monitoring of scientific methods during their development. It is accordingly difficult to understand quality separated from an evaluation of the processes and the results. Consequently, evaluation should be understood as an inseparable part of quality scientific activity. In this sense, together with the ex ante evaluation traditionally contemplated, it is necessary to make advances regarding the introduction of ex post evaluation as the final phase of any project or action for R+D+I promotion and aid. It is only this security of knowing that added value will be obtained through the creation and achievement of new applications for health assistance, together with respect for all ethical considerations, which enables the legitimisation of the performed actions out. Similarly, it is necessary to make changes to the prior evaluation mechanisms linked to promotion actions carried out by public healthcare authorities. These changes should be directed towards guaranteeing the maximum possible level of objectiveness, transparency and adaptation to the objectives defined for such actions. The evaluation should be directly linked and used as the basis for accreditation of professionals, groups and centres.

## **8. PROMOTION OF THE DEVELOPMENT OF TOP - LEVEL R+D+I BASED ON PRIORITY LINES OF ACTION**

The functioning of the Strategic Plan for Health R+D+I in the Andalusian Autonomous Region should be established through the definition of different scientific-technological areas, specifying priority lines of action for each of the same, and in consonance with both the Framework Programme of the European Union and Andalusian and national R+D+I Plans.

These lines of action should be centred on health problems considered to be of priority importance in Andalusia, the challenges faced by the National Health System and the management of opportunities for growth and future development, identifying niches in which the autonomous region may have or develop comparative advantages.

## **9. PROVISION OF THE SSPA WITH THE HUMAN RESOURCES REQUIRED TO DEVELOP THE ABOVE STRATEGIES**

Human resources are the fundamental basis of the Science and Technology system. The Regional Ministry of Health needs to plan an attractive scientific career for professionals of the SSPA as a an inherent part of its assistance activity, in consonance with European, national and regional planning. This strategy should be directed towards promoting talent and creativity among professionals and offering opportunities for training, incorporation, stability and promotion, based on the principles of flexibility, mobility, evaluation and quality. The system of talent searching should respect principles of equality of opportunities, publicity, merit and capacity.

The availability of human resources which are sufficient and adequate for the needs of our Science and Technology Subsystems is not only related to their number and quality, but also the manner in which they are to be organised. In this sense, multidisciplinary and intersectorial groups will be promoted, based on the transversal approach which is offered by considering R+D+I projects as a reference parameter.





## 10. GUARANTEES AS TO THE FINANCIAL SUSTAINABILITY OF THE PLAN

The major advances in biomedical research in Spain, and particularly in Andalusia, have been made possible due to the significant increase in R+D+I investment, which has multiplied sixfold over the last 20 years. The percentage of the GDP dedicated to R+D+I in Andalusia is 0.89% (2003 figures), as opposed to 1.10% in the rest of the country and the EU average of 1.93%. This is still a long way from the 4.27% registered in Sweden, 3.49% in Finland and 2.59% in the United States.

Nonetheless, these percentages are reached in Andalusia mainly due to efforts by the public sector, which provides 62% as opposed to 32% provided by the private sector. The average for the rest of the country is 54% public as opposed to 46% private. The aim of the Interministerial Commission for Science and Technology is to reach a private contribution of 55% by 2010 and to continue gradual increase of this proportion.

Accordingly, it can be inferred that the strategy of guaranteeing the financial stability of the lines of action contained in the plan necessarily consists of providing incentives for participation by private initiatives in the process of biotechnological innovation and their involvement as an indispensable actor and driving force of the actual socio-economic transformation. The public sector's role should be to provide support during the lean periods which characterise investment in biomedical research until such investments recover.







44 **LINES OF ACTION**

Set out below is an outline of the lines of action classified in three ambits in order to reflect the production stream of R+D+I in biomedicine.

On the one hand lines are established towards granting the necessary resources, the primary materials, which can potentially generate quality knowledge to serve the interests of both the SSPA and the Andalusian Knowledge System. These resources have in turn been organised into three categories:

- a) Financial
- b) Human resources
- c) Structural

Secondly, lines of action are proposed directed towards achieving production of quality biomedical knowledge, with priority being given to the thematic areas which are established in the different annual programmes of activities to position Andalusia at the forefront of the field by 2010. Quality production entails involvement in the thematic research programmes of all the actors in the Biomedical Subsystem within the Andalusian Knowledge System.

The third group of actions consists of those relating to the transfer of knowledge generated to the business sector and to clinical activities. Given that this is a novel scenario for the SSPA, the main difficulties and shortcomings are related to the lack of regulation and structures for the channelling of knowledge. In accordance with the horizontal strategies presented in this plan, the complementarity and use made of the structures already created within the Andalusian Knowledge System are an indispensable requirement for any activity which is programmed. It is necessary to highlight that this area deals not only with activities directed towards transformation of knowledge into new products and technologies in the strictest sense.

The plan also seeks to foster the generation of innovation in the health sector resulting from the spreading of new procedures and processes which may give rise to new forms of relations and medical assistance for citizens. Similarly, lines of action are also included with the aim of achieving adequate recognition and protection of the knowledge generated in the ambit of public healthcare administration. Finally, adequate dissemination of the expected results of the research should also involve prior consideration of the eventual impact on citizens. For this reason, actions are also incorporated directed towards granting the precise and exact transmission of the potential benefits of health research, thereby avoiding the generation of false expectations on the part of society.

## 1. RESOURCE DEVELOPMENT

### a. Financial

#### i. Public

① Increase the efficiency of available resources.

a. Decentralisation of the management of calls for R+D+i funding to external agencies, establishing more flexible administrative frameworks and more versatile structures which enable the generation and adaptation of rapid responses to changing scenarios. These agencies will be linked to the Regional Ministry of Health by means of agreements which establish clear objectives, procedures, management systems, evaluation criteria, etc.

b. Advances in terms of the development of principles of publicity, efficiency, transparency, objectivity, merit and capacity in applications for public funding.



- c. Establishment of systems of shared/co-ordinated information with other public financers of research, at least at a regional and national level.
- d. Promote the use of shared resources and infrastructures in the development of projects.
- e. Establish systems of complementarity for Andalusian public funding which guarantee global compliance with the objectives of the Biomedical Subsystem.
- f. Introduce the philosophy of project management in the development of R+D+i activities.

② Promotion of the access to new public resources.

- a. Establishment of the Office for European Projects of the SSPA, with the philosophy of networking based on already existing resources which will be complemented with other structures in the Andalusian Knowledge System and other structures existing at a national and international level.
- b. Promotion of co-financing of R+D+I programmes using resources derived from public institutions at different territorial levels.
- c. Establishment of agile and accessible systems for the spreading of public funding and incentives for research and innovation.

ii. Private

- ① Development of stable fora for the establishment of relations with non profit-making entities to set in motion projects for the sponsoring of research and innovation activities.
- ② Development of alliances with companies in the mass consumer sector to carry out social marketing actions.
- ③ Advancements in the development of new systems for the generation of financial resources for research purposes based on the successful experiences of other regions or countries.

## b. Human resources

### i. Increase the critical mass

- ① Promote the incorporation of new professionals of the SSPA in scientific activity, their organisation into emerging groups supported with specific financing sources and their integration in consolidated groups.
- ② Establish mechanisms for the attraction of research staff from early training and postgraduate stages.
- ③ Co-ordinate with other Andalusian public authorities the establishment of programmes for the return of research staff of Andalusian origin who work outside the autonomous region.
- ④ Development of programmes for the attraction of top-level researchers in the thematic areas which are identified as priority areas under the plan and which suffer the greatest shortages. These researchers will be linked, either temporarily or permanently, to projects which include the participation of the SSPA.
- ⑤ Promote the incorporation of new professional groups to R+D+I groups with an intersectorial and multidisciplinary focus which guarantees the transversal character of scientific-technological activities, and which takes as its point of reference the projects and not the institutions.

### ii. Promote talent and the professional development of research staff

- ① Professional development:
  - a. Define the responsibilities associated with research and innovation and integrate them in the maps of the responsibilities of SSPA professionals. This will serve as the basis for selection and professional development linked to evaluation and accreditation systems which uphold the principles of equality, merit and capacity.



- b. Ensure that the basic responsibilities of research staff include the possession of adequate training in the management of projects, practical knowledge of the system of innovation and transfer of results and specific skills relating to the use of new technologies.
- c. Integrate training needs linked to research and innovation in the Comprehensive Training Plan of the SSPA (undergraduate, postgraduate and continuous training).
- d. Set in motion systems to monitor professional development linked to the person which exercises the functions of training.
- e. Establish systems of professional and economic recognition of research and innovation capacities through the identification of indicators associated with the activities of assistance, scientific production, co-ordination and co-operation with other professionals, institutions and companies, transfer of knowledge and entrepreneurial activity. These indicators will have greater importance for the coverage of managerial positions within the SSPA.
- f. Establish agreements with academic institutions and research centres for the development of training programmes and specialisation in strategic research areas.
- g. Implement specific professional development programmes for top-level research groups.
- h. Establish programmes for the incorporation of technical staff providing support to research activities.

② Stabilisation:

- a. Implement periodic programmes for the conversion of training contracts into research employment contracts.
- b. Establish programmes for the stabilisation of researchers associated with programmes providing support for research activities.

③ Intensification:

- a. Develop programmes for partial release from assistance activities and increase the research activity of health professionals linked to centres with research areas of major strategic importance.

④ Mobility:

- a. Promote interchange and intersectorial and geographic mobility of SSPA researchers, both within the system itself and with leading national and international centres in strategic areas.
- b. Include prior mobility as a meritorious factor in terms of professional development.
- c. Establish programmes for collaboration with the biotechnological business sector which facilitate the exchange of research and technological staff for temporary periods and linked to specific projects.

⑤ Working conditions::

- a. Promote work environments and organisations which facilitate the development and achievement of the research targets together with the conciliation of professional and personal life.

⑥ Gender impact:

- a. Support equal access by women to research activities.
- b. Analyse the current gender distribution of research activities in the SSPA, and establish recognition of those organisations which have equal distributions, an element which will be expressly and positively assessed in programmes for support and promotion of research.

### iii. Development of research management professionals.

- ① Develop programmes for the practical training of professionals in the area of research management.

## c. Structural

### i. Infrastructures

- ① Establish, with the collaboration of public and private institutions, a programme for the creation of biomedical research centres and institutes associated with the SSPA and linked to strategic lines of action of high competitive value and with a clear translational focus. Such centres will combine research staff in basic and applied areas with the development groups of biotechnological companies.
- ② Promote the establishment of systems for shared exploitation of research and innovation infrastructures, based on the development and maintenance of inventories of the research equipment and infrastructures of the SSPA and collaborating entities. The permanent updating of these inventories will be considered as meritorious in terms of access to public grants for research and innovation established by the Regional Ministry of Health.
- ③ Promote the formation of shared networks of research infrastructures among the different actors of the Andalusian Knowledge System.
- ④ Establish mechanisms to enable control of the incorporation by entities responsible for research management of equipment financed through public funding.

- ⑤ Develop and implement a unique information system for the management of research in collaboration with other public institutions of the Andalusian Knowledge System, which will serve as the basis for the evaluation and monitoring of scientific and technological activity.
- ⑥ Develop biobanks as platforms of services for network research.

## ii. Organisational structures

- ① Promote the adaptation of the organisational structures of the SSPA to the models and instruments which guarantee the free spreading of knowledge and its transformation into new processes, procedures and technologies which improve activities in the area of assistance, promotion of public health, access by citizens to the SSPA and the working conditions of its professionals. These models and instruments will be based on principles of decentralisation, co-operation, shared responsibility and transparency.
- ② Develop the instrumental role as facilitator and co-ordinator of the Fundación Progreso y Salud as a central entity for support and management of the research activities of the SSPA.
- ③ Establish the horizon map of research structures (regulatory, management and production) associated with the SSPA and the convergence plans which enable the achievement of the objectives proposed. This map will further establish the functions of each of the structures contemplated.
- ④ Promote equal access of male and female professionals of the SSPA to certain services relating to management and support of top-level research.

- ⑤ Promote incorporation by the researchers of the SSPA in co-operative research structures of a regional, national and international ambit defined in the different plans and programmes..
- ⑥ Promote the continuous evaluation and accreditation of research structures which have been established in the horizon map.
- ⑦ Boost active participation by citizens through the incorporation of associations and other sources of social representation in structures for research performance and regulation.
- ⑧ Develop actions in collaboration with the other parties to the Andalusian Knowledge System for the creation of a bioregion in Andalusia.

## **2. DEVELOPMENT OF PRODUCTION**

### **a. Define the Research Guidelines**

Design and set in motion the system for the definition, supply and translation of the priority lines of research to the instruments and actions contemplated in this plan. These priority lines will be directed towards the improvement of the main health problems affecting citizens and will take into account those areas in which the autonomous region may be more competitive.

### **b. Promote quality translational research**

I. Establish mechanisms for the positive discrimination of translational research, directed towards results in terms of health through actions for the promotion and support of research set in motion by the Regional Ministry of Health.

- II. Foster the training of mixed research groups with the participation of both professionals from centres and clinical management units of the SSPA and staff from centres and institutions dedicated to basic research.
- III. Promote the incorporation of medical assistance staff in research spaces outside the ambit of the SSPA for the development of specific projects.
- IV. Promote associations between the research centres of the SSPA and basic research centres located in Andalusia.
- V. Reanalyse the role of regulatory structures with the aim of increasing the flexibility of organisation and functioning to facilitate the development of research without hindering their functions and guaranteeing ethical principles.

c. Guarantee the integration of research and innovation activity in the objectives of centres and professionals of the SSPA.

Establish objectives for scientific production and innovation activity in management agreements between financiers and public healthcare suppliers which are internally transferred to agreements with clinical management units.



**d. Promote the development of pharmacological clinical research**

I.. Establish the structures and mechanisms necessary to increase participation by the SSPA in the development of pharmacological clinical research as a means of contributing to the analysis of the efficiency and safety of medication and health products, to introduce innovative practices which result in health benefits for citizens and to extend the knowledge and application of scientific methods among professionals. Participation in pharmacological clinical research should be carried out based on principles which guarantee ethical considerations, the safety of citizens and professionals and the provision of added value to the global objectives of the SSPA and the health of the population. To do so, within the framework of guarantees of compliance with such principles, the following lines of work will be set in motion:

- ① Analysis of factors concerning competitiveness of clinical trials, particularly in early phases, with special attention being given to the role of management and regulatory structures for clinical trials in Andalusia. This analysis will involve the participation of representatives of the Andalusian Health Service and pharmaceutical companies.
- ② Develop support structures in the healthcare centres of the SSPA for clinical trials with co-financing by the pharmaceutical industry.
- ③ Increase the proportion of clinical trials in primary phases.
- ④ Promote the development of clinical trials in Primary Care.

e. Incorporate the culture of evaluation in scientific and innovation activity.

- ① Define and monitor the evaluation indicators of research and innovation activity in the field of biomedicine in Andalusia.
- ② Design and set in motion a model for the evaluation of the health impact of research projects in terms of a cost-benefit analysis.
- ③ Establish permanent systems of bibliometric evaluation.
- ④ Promote actions for the evaluation of scientific activities carried out by institutions and experts, without direct interests in the Andalusian knowledge System, and in accordance with the principle of transparency which should govern both the criteria of evaluation and the conclusions and consequences deriving from the same.

f. Continue with the construction of the legal framework which guarantees the development of research activities in ethical conditions and with due safety.



### 3. TRANSFER AND DIFFUSION OF RESULTS

#### a. Strengthening of the Science-Technology-Business System

- I. Promote permanent alliances of the SSPA with other agents of the Science-Technology-Business System, especially with universities and companies with a technological base established in Andalusia, for the establishment and development of the main research projects and programmes which are set in motion in the autonomous region.
- II. Boost the development of spin-off companies constituted by professionals of the SSPA and universities regarding projects with a translational focus and a high degree of innovation and competitiveness.

#### b. Legal protection of research results

- I. Develop the Model for the Protection of Intellectual and Industrial Property of the research and innovation activities of the SSPA.
- II. Establish a legal framework for the regulation of the protection of the results of research and innovation activity of the SSPA, providing incentives for professionals to work within this ambit and fostering the transfer of results.

### c. Transfer of results

- I. Design and establish the Office of Technology Transfer of the SSPA as a network structure directed towards promoting the culture of dissemination and transfer between professionals, and as a proactive structure for support and management of results protection and searches for commercial alliances for the translation of results. This Office will guarantee a homogenous framework of relations with the business sector aligned with the values of the defined Model of Intellectual and Industrial Property.
- II. Promote the collaboration, complementarity and exploitation of structures to support the transfer of research results established in Andalusia by public bodies. Promotion of the creation of an Andalusian Market for the Transfer of Biomedical Research Results in the field of health, as a virtual forum for relations between the different actors in the Science-Technology-Business System.
- III. Incorporate the transfer of results as a meritorious factor in the evaluation of actions for research promotion and funding.
- IV. Promote an entrepreneurial culture among the professionals of the SSPA.

**d. Dissemination of results**

- I. Implement tools for the management of knowledge which facilitate its free spreading, together with the dissemination and practical application of innovative practices in the SSPA.
- II. Design and set in motion actions directed towards increasing awareness and interest of the citizens in scientific and innovation activity in the field of biomedicine and also of the professionals which perform research, highlighting the value of their results in terms of health and socio-economic progress.
- III. . Provide permanent communication channels with citizens' organisations which enable active participation by citizens in the development of health research in Andalusia and contributing to avoid the generation of false expectations regarding potential or foreseeable results. Special care will be taken to ensure that the transmission of research to society is carried out in a simple and understandable language which is accessible to those who do not have specific technical qualifications.





