

CSIC Strategic Plan 2010-2013

The Heritage Laboratory Strategic Plan: An Interdisciplinary Research Line on Cultural Heritage

Laboratorio de Patrimonio (LaPa - CSIC)

Located on: Instituto de Estudos Galegos Padre Sarmiento, IEGPS - CSIC

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1. Research Line of the LaPa

1.1. General Information on the Research Line

1.1.1. Name

Interdisciplinary Research on Cultural Heritage.

1.1.2. Description

The **scientist in charge** of this line is Prof. Felipe Criado-Boado.

The **scientific problem** that this research line aims to solve is to *analyse how Cultural Heritage and the knowledge and values associated with it are produced, managed and socialized, as well as the material elements and social practices that integrate it.*

This line of research is materialised in a *specific research unit* named the **LaPa** (*Laboratorio de Patrimonio* or Heritage Laboratory). The Line description is completed with a Microsoft PowerPoint presentation showing additional information: see Multimedia Gallery.

The **constitution, organisation and development of the LaPa unit** is, in itself, a strategic objective of this plan. Its origins are in the LAr (Laboratory of Landscape Archaeology), which was created and developed at the IEGPS (Padre Sarmiento Institute of Galician Studies) through the Strategic Plan 2006-2009. The growth of the LAr, the expansion of its research subjects, the increasingly stronger orientation towards Heritage studies (already included in the existing SP), and the active incorporation of researchers from the University of Santiago de Compostela (USC)

in joint research projects have all stimulated the challenge of defining a research programme with a broader perspective, and creating a wider-ranging unit (i.e., the LaPa) to reach new scientific, technical and practical horizons.

A short account on the **history of LaPa: From LAr to LaPa**.

The LAr has existed as a research group since 1992. Its global indicators for the period 1992-2007 include: capturing 14,935 K € in external resources (including 5,000 K € corresponding to the Consolider Programme), which have been transformed into 82 books and monographic works, 132 book chapters, 188 papers (48 in ISI-listed and international journals), 254 conference contributions, 8 PhD and 55 MPhilD. The LAr was created within the USC; it has been partially integrated in the CSIC (Spanish National Research Council) – IEGPS since 2001, and experienced a period of major growth between 2004 and 2008. At the same time, it consolidated its relationship with two research groups from the USC (SINCRISIS, led by Dr. Marco García-Quintela, and EPEC-Network, led by Prof. Antonio Martínez-Cortizas), through an associated unit agreement between the USC and the CSIC which connects the two groups with the latter. All three are also taking part in the same Consolider Programme (CSD2007-00058), which is coordinated by Prof. Felipe Criado-Boado and includes a further 13 groups from different organisations. Currently, the LAr (in the process of being reconverted as the LaPa) has a staff of 30 people, and its global indicators for the period 2003-2007 include: 160 research projects, 10,189 K € (including the total funding of Consolider Programme), 203 papers, 34 books, 247 conference contributions, 3 PhD, 103 training courses, and 89 dissemination events (see Multimedia Gallery or Research Line Indicators > Other Details > Download Document).

LaPa as a Joint Unit between the CSIC and USC: As explained in the previous paragraph, the LaPa has strong capabilities. In addition to those provided by the CSIC, there are also those provided by the previously mentioned associated unit of the USC. For this reason, this document actively includes the resources and potential provided by the researchers of the USC, including 4 professors and post-doctoral researchers with full capacity to operate as project head researchers. It is necessary to take these reinforcements into account in order to evaluate the viability of the sub-lines and proposals included in this Strategic Plan, as most of the capacities for paleoenvironmental, archaeometric, historical and artistic research are within the groups from the USC.

The LaPa (including personnel from the CSIC and the USC) is capable of carrying out an integral, multidisciplinary and transversal line of research in studies on Cultural Heritage. This line is extended through **seven specialised thematic sub-lines** and **two service units**. Each of the sub-lines is described in brief, including key words, general objectives, a SWOT (strengths, weaknesses, opportunities and threats) analysis and details of its work. However, no strategic plan for the sub-lines is included, mainly for reasons of brevity, and partly to strengthen the integrated nature of the Line. The scientist responsible for each sub-line is also indicated, as the person in charge of the scientific leadership of the research carried out in each area, for directing the working unit eventually resulting

from the sub-line, for the scientific coordination of the specific projects carried out within the sub-line, and for the purposes of interlocution and functional coordination with the rest of the LaPa.

Two service units are to be created: one is external, the **Archaeological Services Unit**, oriented towards providing technical assistance and specialised services; another is internal, the **Horizontal Services Unit**, oriented towards providing the horizontal services required by the LaPa. These include management functions, as well as maintenance and the implementation of advanced techniques.

Important note: The description of the line and its strategy is offered in as brief a format as possible, avoiding rhetorical and long-winded explanations. *We believe that what demonstrates the true viability of the scientific and practical sub-lines and strategies proposed is not so much the arguments that justify them, as the indicators on the performance of the line and its members in the past.* For this reason, we have included as additional documentation a summarized version of the CV of all of the researchers included in the line, who are staff members of the CSIC and have the full legal and curricular capacity to work as head researchers on research projects (see “Research Line Indicators” > Staff: this includes 8 scientists: F. Criado, C. Parceró, C. González, C. Sánchez, D. Barreiro, P. Prieto, M. Costa and L. Armada). However, the document does not include the summarized CVs of the research personnel of the USC mentioned above.

Also, with the aim of avoiding unnecessary complexity, no documents are included on the Telematic Application, with two exceptions: (1) in the “Extended Description” section below, a document has been included that contains all of the texts and tables that constitute the SP for the LaPa, with the exception of the indicators, and (2) in the section “multimedia material” a Microsoft PowerPoint presentation has been included containing supplementary material about the line and its strategy.

As mentioned at the beginning of this document, the **scientific problem** that the line of research of the LaPa intends to solve is to *analyse how Cultural Heritage and the values associated with it are produced, managed and socialized, as well as the material elements and social practices that integrate it.*

The **concept of Cultural Heritage** we use within this line considers it, succinctly, as the *footprint of Memory and Oblivion*. This “footprint” is comprised of *all of the products of human activity and their remains, both intentional and unintentional, tangible and intangible, which represent historical and social processes, which derive their meaning from them and which, at the same time, are given a new significance by them by introducing new meanings and/or being re-negotiated.* This definition includes, on the one hand, objects and ideas that are socially valorized as “heritage elements”, either within the context in which they are created or in another, later context; but on the other, includes the “objects” and “remains” that have the potential to achieve this valorization at a later stage due to their representative nature. This definition considers Cultural Heritage as a metacultural process, in which certain aspects of culture are legitimised as

something worthy of being studied, conserved, inventoried, catalogued and valorized. For this reason, the definition includes what is somewhat confusingly referred to as “Natural Heritage”, not only because the environment is always a product influenced by social action, and which preserves the ecological footprint of mankind, but also because the natural environment achieves the category of “heritage” based on a socio-cultural semantization.

A basic feature of our approach is the use of the **heritage value chain** as a theoretical model with which to organise the research and management of a heritage element. This model, whose development has received a major contribution from the LaPa in the past, considers that heritage elements are configured by acts of identification, documentation, signification, valorization, conservation, diffusion and reception, and establishes that good working practices in relation to the research and management of these elements must include all of these dimensions.

This concept is parallel, to some extent, to the concept of the **science value chain**. For this reason, the research strategy of the LaPa is intended to satisfy the complete cycle of this value chain in relation to Heritage, namely: **research** as the production of new knowledge; **transference** as the way of making this knowledge useful and relevant in social terms, and **diffusion** as a means of valorizing this knowledge to the general public.

The practical strategy of the LaPa is committed towards a specific concept of **scientific research and social function in Human Sciences** which makes it possible, in correlative and complementary terms, to satisfy the criteria of excellence and relevance in these disciplines. The LaPa therefore assumes that the practice of Human Sciences must be based, as with all scientific disciplines, on carrying out rigorous empirical studies supported by robust theoretical models, and that their social function resides in their contribution towards and/or involvement with specific processes for the production of value, whether this means uncovering the meaning of the heritage elements (their original meaning in the societies that created them), identifying their meaning in the present day (their current meaning for the societies that incorporated these elements at a later stage), or transforming them into cultural resources (their functional value in socio-economic terms).

The line of the LaPa includes sub-lines for studying Cultural Landscapes, Built Heritage and Architecture, Archaeological Heritage, Intangible Heritage, Paleoenvironmental Archives and Proxies and Natural Heritage. In the process of researching all of these, their formal and material components must be interacted with their historical and anthropological significance, as well as their public and utilitarian dimension. Precisely for this reason, the importance of this proposal is justified by the importance of Cultural Heritage, which includes both its historical value and its value as a social and economic resource.

The line of the LaPa presents a series of **common features** that reinforce its integrity and the synergy that exists between all of its sub-lines. We consider the most important of these as being:

1. An approach towards Heritage through its spatial dimension, paying special attention to its spatial articulation. This is partly derived from the tradition of research based on Landscape Archaeology. However, it is also the result of an essential factor which is often overlooked in approaches towards Heritage: the elements that constitute it are always “forms”, and as such, their formal characteristics (and not only their material features) influence the processes of identification, conservation, signification, valorization and even the social benefit and public reception of the “element”. In this way, the focal point of the proposal by the LaPa is the formal dimension of Cultural Heritage and its study and scientific characterization using advanced methodologies that are nevertheless integrated and enriched by transverse approaches involving different disciplines: History, Art, Anthropology, Archaeology, Earth Sciences and Material Sciences.
2. Similarly, the line also shares a central methodological orientation, focused on the materials themselves, and based on precise fieldwork techniques, on the exhaustive recording of information, the control of records and the conditions in which they are recorded, and the archiving of this information in order for it to be used and revalorized by other subsequent agents.
3. The line also shares a rationalist theoretical approach, based on structural and post-structural approaches, and an interpretive method based on “thick description” and an epistemology influenced by post-modern thinking which, nevertheless, attempts to overcome the solipsistic subjectivism of the most commonly used post-modern approaches through intersubjectivity, reflexivity and critical pragmatism.
4. The line makes extensive use of different varieties of formal analysis especially adapted to describe phenomena of a spatial nature and which are spatially conformed.
5. The line shares methods of in-group, cooperative and, in many cases, interactive work, which are based on the creation, maintenance and use of a shared, common Information System, which fully applies models of open access for all of the members of the line and –with certain precautionary measures– for external agents.
6. The line shares a position defined as critical pragmatism, permitting actions for the production of value and interaction with the environment in an attempt to have a direct influence on the social reality, and to contribute towards the transformation of its objective conditions.
7. Finally, the line shares a vision in relation to its work that does not just conform to generating knowledge about the processes involved in the socio-cultural production of reality (in the past and the present) through the analysis of the archaeological, historical, environmental or anthropological record, but which also intends to play a role in the

dynamics of the construction and transformation of reality in the present, by fully introducing them into the management policies of Cultural Heritage, the environment (of which it forms a part), territorial organisation and social development.

1.1.3. Extended Description

This same document, in its complete version and formatted.

1.1.4. Key Words

Cultural Heritage Studies. Landscape Archaeology. Cultural Landscape. Geoarchaeology. Material Culture. Archaeology of Buildings. Ethnography. Heritage Formation. Semantic Technologies. Information Systems. Geoarchaeology. Values. Traditions. Value Chain.

1.1.5. General Objective of the Line

The **general scientific objective** of the Line is to establish how the value chain of Cultural Heritage is constituted and organised. This involves establishing how Cultural Heritage is configured through heritage formation processes and traditionalization processes, its significance in its original contexts of use, how it was given a new significance in the social contexts that reinterpreted these elements as heritage values, and how they are transformed into cultural resources in our societies. The LaPa therefore intends to develop advanced technologies and procedures to describe all of the different dimensions involved in the value chain for cultural heritage: its (1) identification > (2) conservation > (3) signification > (4) valorization > (5) social capitalization > and (6) public reception.

The resolution of the scientific problem of the line of the LaPa (described above) makes it possible to define the heritage dimension of social reality: all reality is culture, and the metacultural act of selecting certain aspects of culture –its elements and values– constitute the basis of Cultural Heritage; all reality contains heritage elements, and depending on how it strategically uses memory, identity and tradition, it is constructed with them as its basis. For this reason, advanced research into Cultural Heritage, based on rigorous empirical studies derived from robust theoretical models, must serve to discover in a positive and critical manner the processes through which societies value and valued (i.e. create and created value for) some things instead of others.

The final aim of this line, which is intended to be supported more effectively through the integration of different disciplines and specialities in the LaPa Unit, is to contribute towards the development of a Cultural Heritage Science which as such does not exist, given that Heritage is dealt with in specific areas by different disciplines, and lacks an integrated scientific approach.

1.1.6. Multimedia gallery

- LaPa Indicators and Production for the Period 2003-2007: *Excel Document*
- LaPa Supplementary Information: details about Line Structure, interaction between Sub-lines, internationalisation, research infrastructures and headquarters: *Powerpoint Presentation*

1.2. Line Indicators

Interdisciplinary Research on Cultural Heritage

2003-2007 Activities	STAFF	PROJ CTS	FUNDING	SCIENTIFIC PRODUCTION			TRAINING		DIFUSSION		Total actions
Research Sublines				papers	books	congress	Ph.D	courses	events	materials	
Landscape Archaeology and Cultural Landscapes	11	47	6.975.076,01	36	5	75	0	42	17	8	241
Material Culture and Formalization Processes of Cultural Heritage	3	4	114.700,00	27	0	33	0	5	2	1	75
Rock Art Studies	0	12	158.995,00	19	6	12	2	4	13	1	69
Theoretical and Historiographic Research on Heritage Studies	5	2	260.685,00	27	1	29	1	15	10	0	90
Archaeology of Buildings	4	10	260.011,00	17	2	16	0	15	9	0	73
Processes of Heritage Formation: Memory, Identities ,Conflicts	3	6	135.287,00	47	10	48	0	18	22	8	162
Semantic Technologies for Cultural Heritage	2	3	194.387,00	9	2	21	0	4	11	0	52
Socio-economics of Cultural Heritage	2	0	0,00	0	0	0	0	0	0	0	2
Applied Archaeology and Methodological Developments	0	76	2.089.985,17	13	3	8	0	0	5	0	105
Subtotal	30	160	10.189.126	195	29	242	3	103	89	18	869
Services Units											
LaPa Archaeological Services Unit (USAr - LaPa)	7	0	0,00	8	5	5	0	0	0	0	25
LaPa Horizontal Services Unit for LaPa (USH - LaPa)	10	0	0,00	0	0	0	0	0	0	0	10
Subtotal	17	0	0,00	8	5	5	0	0	0	0	35
Total	47	160	10.189.126	203	34	247	3	103	89	18	904
				484			106		107		

Important Notes about FUNDING

1st	"Funding" includes the total funds obtained through project-grants in year 2007, but actually the most of these Projects start in 2008 and last until 2010 or even 2012. CSIC statistics counts the total budget of Project Funding in the year of decision.
2nd	"Cell D6" includes the total funding of Consolider Programme TCP, what sums up to 5,000 k€ and last from 2008 to 2012. The Programme has been proposed and is directed by LaPa, but this amount includes the funding of 17 different Research Groups (116 scientists involved) belonging to five different institutions (CSIC, USC, UJAean, UPV-EHU and UPM). The actual amount corresponding to LaPa is 1,700 K€.

1.3. Critical analysis

1.3.1. SWOT Analysis

Weaknesses

- Imbalance between all of the work carried out and its real visibility in terms of scientific publication; the still excessive tendency for regional and Spanish publication, as well as participation in congresses, in scientific publications as a whole.
- Separation of the LaPa in two different premises, both of which are insufficient. Scarcity and unsuitability of the spaces available to contain all of the LaPa, which complicates the intensive coordination of the team and hinders integration.
- Absence of professional structures and permanent technical personnel to handle the large amount of management work and to resolve the highly demanding specialised techniques generated by the workload of the LaPa. These tasks are self-financed by the resources of the LaPa itself.

Threats

- The recent growth of the group could eventually lead to a loss of the integral identity that has continued over time if it is not supported by institutional mechanisms that help to reinforce it.
- Possible conflicts with sectors in the Galician administration and academic world.
- Economic-financial inflexibility: lack of autonomy for the management of own resources, excessive indirect costs.

Strengths

- An integrated, interdisciplinary team, with a mentality for cooperative and interactive work that facilitates a transverse approach between disciplines.
- Researchers with accredited CVs and a strong presence in international networks and collaboration projects. International presence of the team.
- Research practice based on an open access Information System shared by all of the members of the LaPa.
- Elevated capacity for obtaining funding.

Opportunities

- A young and enthusiastic team (the average age of permanent researchers is 42), with good expectations for future actions.

- Present emphasis and interest (from a scientific as well as economic, social and administrative point of view) in Heritage and Cultural Landscape studies.
- Good interaction with the academic and socio-economic sphere. Consolidated prestige of the LaPa as a research unit.
- Institutional context of support for technology and knowledge transfer (Lisbon objective: competitiveness in the knowledge society): support for human sciences (creation within the CSIC of a large Human and Social Sciences Centre – CCHS) and support for the creation of spin-off companies.
- Santiago de Compostela prestige as an international cultural reference, particularly from historic and heritage perspectives. Because Santiago Pilgrims Route, almost any topic about Santiago Heritage becomes at some extent “universal”. However, scientific practice on history, art and related disciplines in Galicia and Spain have not taken advantage of such potentiality yet: it remains as a challenge for the future.

1.3.2. Selective Advantages

Active inter- and trans-disciplinarity of the LaPa, which involves the following disciplines: Archaeology, History, Art History, Anthropology, Ethnography, Ethnoarchaeology, Historical Anthropology, Geoarchaeology, Earth Sciences, Archaeoastronomy and Software Engineering. Strong interdisciplinary integration which makes it possible to develop approaches that are less viable in other larger and more specialised centres. Cooperative and interactive approach towards work within the LaPa, seen most clearly in the systematic use of a shared, open access Information System for all of its members.

Integration of theory and practice through theoretical and methodological models developed within the LaPa itself, contrasted in international scientific literature and adapted in other research groups and contexts. Sharing (i) an integral model of scientific practice conceptualized as a Value Chain, and (ii) a Value Chain model to guide Heritage research and management. Development within the LaPa of an innovative and ambitious concept of Heritage that facilitates integration and transversal approaches. Emphasis on a dynamic comprehension of Heritage concerned with “*procesos de patrimonialización*” (Heritage Formation Processes).

The capacity to generate innovative, added value services from research in the Heritage sector, and the conviction that these have to be externalised from a public research institution through options such as the creation of an External Services Unit (USAr), and above all the development of TBEs.

Prestige at international level and in Spain of the LaPa as a collective, and of its members in their different specialist areas. Availability of a technological infrastructure and high capacity scientific equipment.

Current public recognition of the importance of the issues involved in the research work of the LaPa: Heritage, Cultural Landscapes, Urban Planning and Sustainable Development.

Culture of collective work shared by all of the members of the team. The commitment to integrate individual efforts in the development of a shared line of research, emphasising the efforts of the group over those of its individual members, is a working principle that is firmly established and consciously applied by all of the members of the team. This principle lays the foundations that make it possible to develop long term, sustainable research programmes.

1.4. Objective and Strategy Design

1.4.1. General qualitative objectives: What are the goals?

1. To constitute a Heritage Research Unit that carries out research of a high scientific level and socio-economic and cultural relevance, based on the integration and articulation of the original Research Groups, which are now combined in the LaPa project: the Laboratory of Landscape Archaeology (LAr) of the IEGPS – CSIC and the two research groups (led by Antonio Martínez-Cortizas and Marco García-Quintela) of the USC which are linked to the LAr as a Joint Unit between the USC and the CSIC.

2. The mission of this Research Unit will be to promote, develop, validate and diffuse high-quality scientific and technological research of a multi-disciplinary nature on Cultural Heritage, with the aim of contributing towards (i) advancing knowledge in this field, (ii) the economic, social and cultural development related to it, as well as (iii) the training of specialized research personnel, and (iv) providing expert consultancy services to public and private bodies in Heritage matters.

3. The LaPa Line intends to carry out research into Heritage, as well as developing new ways of researching Heritage. The LaPa will focus on research (correcting the excessive influence in the past of the sub-lines of Applied Research and Methodological Development), but without abandoning the application as a means of validating through practice the technical developments of the LaPa.

4. The organisation of the LaPa is complex (it brings together a large number of people, different principles and different disciplines, and moreover handles different kinds of data). For this reason there is a critical need to improve the internal organisation, (i) establishing common organisational and functional principles, (ii) creating and promoting the interdependencies within the Line, (iii) structuring the LaPa Unit, and, definitively, (iv) establishing a corporate culture within the LaPa.

1.4.2. Specific qualitative objectives

Structure and Organisation Objectives:

1. Improving Line internal organisation.
2. Simplifying daily management work carried on by Line personnel.
3. Maximizing scientific and practical coordination and integration.

(See the Microsoft PowerPoint presentation showing additional information: see Multimedia Gallery).

Scientific objectives

1. Improving the quality and impact of publishing: increasing the number of papers in high-profile journals.
2. Maintaining the good existing ratio in the capturing of external funding.
3. Actively participating in a 7FP project.
4. Attracting junior researchers who are both interested in and capable of presenting eligible proposals to the Starting Grants of the ERC.

Knowledge Transfer objectives

1. Getting a full integration of Knowledge Transfer with research activities in agreement with the model of Value Chain of Scientific Practice.
2. Creating an Archaeological Services Unit (LaPa – USAr) to provide specialised technical services and consultancy work to social, institutional and economic agents.
3. Designing methodological protocols applicable to Heritage management and research and normativizing them as industrial standards.
4. Packaging LaPa technological capabilities as products.
5. Using LaPa knowledge to promote a Technologically-Based Enterprise.

Training objectives

1. Opening an Official Post-Graduate Programme as channel for the training of the pre-doctoral personnel of the LaPa, and established within the framework of the TCP Consolider Programme, in close collaboration with some universities.
2. Implementing an internal Training Programme for the specialised education of young researchers and high-level specialist technicians.
3. Establishing a system for the supervision of personnel in training and young researchers.
4. Looking for the best CVs and candidates with open systems of recruitment in international contexts.

Outreach objectives

1. Maintaining and extending the present Programme of Scientific Culture and public diffusion on Heritage research.
2. Using new media (beyond the ones adopted till now) for public dissemination of research results, particularly scientific exhibitions and divulgative books.

Internationalisation objectives

1. Amplifying the presence of LaPa in geo-thematic areas where is already present (particularly the southern tip of South America).

2. Opening new research and field-work areas in new locations, particularly Sub-Saharan Africa and India.
3. Increasing the recruitment of foreign researchers as visitings, pre-doctoral, and post-doctoral staff.
4. Improving foreign language competences of LaPa members.

Common services objectives

1. Enhancing LaPa processes and internal organisation.
2. Developing an Internal Procedures Manual what covers every dimensions of LaPa activity.
3. Incorporating tools to maximize corporative interaction and expertise.
4. Creating an External Unit for specialized Heritage services.
5. Creating an Internal Services Unit for providing technical support and project management to the LaPa activities.
6. Maintaining the operative capacity of the scientific and technical equipment of LaPa.
7. Maintaining computing and information infrastructures adapting their management to the particular needs of a small, agile and highly skilled organisation such as the LaPa.

Gender equality objectives

1. Avoiding sexist discrimination embedded in Spanish academic and in Spanish culture in general activating mechanisms by which all voices will be heard and have equal power regardless of their gender.
2. Balancing the number of men and women working for the LaPa.
3. Making visible gender in the scientific production.
4. Applying a gender perspective to acknowledge the role of women –and in general of minorities— as social agents in Heritage production and meaning.

Quality programme objectives

1. Improving the quality of the LaPa internal processes regarding decision-making, data recording, data analysis, publishing and management.
2. Implementing internal quality programmes.
3. Adopting industry standards, especially in the areas of laboratory data analysis and information recording.

1.4.3. General Strategy

Structure and Organisation of the Line:

LaPa will improve its internal organisation in order to make it more effective, at the same time as simplifying the amount of daily management work (which compromises an important percentage of the human resources of the LaPa in functions such as coordination, training, supervising, project management and data

recording), while at the same time maximizing its coordination and integration on scientific and practical issues. See the “Quality Programmes” below.

Three solutions are adopted for this purpose:

1. Detailed modelling has been carried out on the relationships between sub-lines in order to create a structure that maximises interactions and generates productive synergies; see the PowerPoint presentation showing additional information contained in the *Multimedia gallery*.
2. The core of the organisation will be focused on the scientific team of the LaPa, comprised of the scientific staff who can be head researchers (IPs) in investigation projects.
3. Two Service Units will be created: one for external services, aimed at facilitating interaction with related bodies (USAr – LaPa Archaeological Services Unit) and another for internal services, to provide technical and management support for all of the projects and units of the LaPa (USH – LaPa Horizontal Services Unit).

Scientific strategies

With the aim of improving the level and impact of publications, this activity will be programmed through a Yearly Publications Plan, which will be coordinated by a scientist from the LaPa. This Plan will incentive productivity and quality publications based on a minimum points system that each member of the LaPa will have to achieve on a yearly basis through their publications; the Plan will involve making a careful selection of the themes and destinations of each publication, and will implement an internal quality control system. A secondary, but nevertheless important objective of this Plan, is that all of the publications produced from the LaPa, regardless of their authorship, may be presented as an “LaPa Result”.

This aim also implies reducing publications in regional and medium level journals, as well as papers presentations at conferences and congresses (with the exception of *Software Engineering*, for specific motives pertaining to this discipline).

As a general rule, the LaPa will not publish in any type of publication that lacks a explicit peer review system.

Intensive use will be made of the CSIC’s Digital repository in order to make as much information as possible accessible.

In order to maximise the visibility of its scientific production, guidelines will be implemented for keeping a coherent and constant use of Spanish personal names and institutional references, both in the case of the LaPa and the CSIC.

Knowledge Transfer strategies

The provision of specialised technical services will be channelled through the USAr (Archaeological Services Unit), making every effort to avoid compromising research resources in this area.

The selection of services given by the USAr will be oriented by precise goals and scientific/technical considerations: (i) the generation of relevant data for research activities, (ii) the validation of new methodologies and innovative

techniques developed by the LaPa, or (iii) the promotion of higher standards in Heritage work and the Heritage market.

The LaPa highly criticize the decision of the CSIC of only having “patents” as an indicator of Knowledge Transfer. Patenting research results is practically impossible in the field of Humanities and as a result of European legislation. In order to compensate this negative bias in our indicators, the LaPa nevertheless accepts the challenge of designing methodological standards that are applicable to Heritage management and research, which is proposed as a solution to replace the patent-based approach to KT indicators.

The LaPa will assume a systematic study of our capacities for transfer and service, with the aim of ‘packaging’ them as products.

Based on the application of these strategies, the LaPa will design an initiative for a Technologically-Based Enterprise, or rather a Knowledge-Based Enterprise, which makes it possible to establish an Enterprise of this nature that could be actively related to the LaPa.

Training strategies

It is of vital importance to have an Official Post-Graduate Programme (POP using its original Spanish acronym), which offers a channel for the training of the pre-doctoral personnel of the LaPa. It is envisaged that this programme will be established within the framework of the TCP Consolider Programme, in close collaboration with the Line of *Archaeology and Social Processes* of the CCHS – IH and with the universities taking part in this project: USC, UPV-EHU (University of the Basque Country) and the University of Jaen.

The LaPa will implement an internal Training Programme, coordinated by a scientist from the staff of the LaPa, for the specialised training of young researchers and high-level specialist technicians, so that the first could improve their research habilities and the last may access the professional job market connected with Heritage Management.

This Programme will be aimed at teaching the capacities and techniques that both researchers and managers need in order to develop their personal career. The Programme will include a system for the supervision of personnel in training.

Internal courses and seminars will also be offered with the aim of training the personnel of the LaPa in specialised skills, maximising the socialization (“*LaPization*”) of the expertise of its individual members.

The mobility of personnel trained within the LaPa will be encouraged, promoting work experience in other centres and research environments, particular in foreign centres of reference.

Recruitment processes will make every effort to avoid “endogamy” and seeking candidates at local level.

A system will be established to follow public calls and search for CVs in order to obtain the maximum benefit from the available R+D instruments, attracting the best possible candidates for each function or theme proposed for development within the LaPa.

Outreach strategies

The existing Programme of Scientific Culture (a proper dissemination plan about Heritage carried on by LaPa) will be maintained and promoted, which has demonstrated its success by creating its own public niche (with more than 3,000 people taking part in the different activities of the programme each year). This programme focuses on the public diffusion of heritage research, presenting the activities and knowledge generated by the LaPa to the public, and making the public aware of its significance and protection.

One of the main factors involved in promoting this programme is the obligation for all of the members of the LaPa to allocate five working days per year to activities of this kind.

These functions will be promoted by media that have not been used until now, particularly exhibitions of scientific information and the publication of books through agreements with commercial publishers.

Internationalisation strategies

The international scope of the LaPa will be consolidated through direct research in different regions, including field-work, partly in current geo-thematic areas (the southern tip of South America and Scandinavia), and introducing new areas, particularly Sub-Saharan Africa and possibly India.

The recruitment of foreign researchers will be increased, not only as visitings, but also for pre-doctoral, and particularly post-doctoral researchers. The final aim will be to obtain personnel with strong CVs for senior positions. At the same time, own funds will pay for posts for visiting scholars, who will be resident for between 2 and 3 months, working jointly with the LaPa and offering lectures.

The LaPa will also improve the competence of its members in the English language through specialised training and promoting the use of English in current working situations.

Common services strategies

LaPa is aware that its processes and internal organisation should be enhanced. To this end, common services must be articulated and their routine operation standardised. The actions to achieve these goals include:

- (1) Developing an Internal Procedures and Organisation Manual that is available to and revisable by everyone in the LaPa through hypertext technologies.
- (2) Creating a Handbook of Best Practices in heritage research.
- (3) Creating a Handbook of Research Ethics applied to heritage studies. This is an especially urgent issue as heritage, because of its close links to identity, memory and social processes, is a hotly-debated topic and intensely prone to conflicts.
- (4) Creating a Welcome Kit that will be given to all new staff (wether junior or senior) joining the LaPa, including visiting researchers.

- (5) Maintaining a shared calendar tool to manage group appointments and calls of general interest.
- (6) Deploying a corporate groupware tool to facilitate individual and team work.
- (7) Expanding the existing corporate information system (SIA+), currently centred on archaeological data and processes, into one that covers all types of heritage addressed by LaPa (in development, code-named SILaPa).
- (8) Creating an external services unit that works as an interface between the LaPa and its environment. This will be called USAr, the LaPa Archaeological Services Unit.
- (9) Creating an internal services unit that provides technical support and business-related services to the LaPa, solving the limitations of the centralised IEGPS management, which is often overwhelmed by the workload generated by LaPa itself. This will be called USH, LaPa Horizontal Services Unit.

A crucial and often neglected issue is that of maintaining the operative capacity of the scientific and technical equipment of the LaPa, including that related to GIS, CAD, GPS, automatic topography, remote sensing, paleoenvironmental and deposits analysis, archaeometric analysis, computing and preservation. Adequate technical support, technology change planning, configuration management and user training are necessary. This is especially relevant in relation to computing infrastructures, due to the speed of change in this particular technological area. The current infrastructure management systems of the CSIC, to which LaPa is subject, are too rigid and slow, and do not account for the particular needs of a small, agile and highly skilled organisation such as the LaPa. For this reason, the LaPa would like to seek a formula where a higher degree of autonomy is attained within the necessary legal framework imposed by the CSIC.

Gender equality strategies

LaPa, as a young and progressive research environment, maintains a conscious anti-sexist attitude and promotes gender equality. At the LaPa, its researchers also believe that the formal implementation of gender equality policies is not enough due, in part, to the sexist discrimination embedded in Spanish academic and in Spanish culture in general. The LaPa's policies regarding gender equality cannot be limited to the implementation of formal measures to balance the number of men and women working for the institution but also, and more importantly, to activate mechanisms by which all voices will be heard and have equal power regardless of their gender.

Taking this guiding principle into account, the LaPa will implement gender equality policies following a twofold strategy: Firstly, the implementation of specific measures to visibilize and balance gender presence in scientific production. This strategy will include general measures, such as increasing the percentage of women in postdoctoral posts and permanent scientists; and concrete measures, such as the

inclusion of the name, without initials, when signing articles to visibilize gender issues in the scientific production.

The second strategy is related to the application of gender theories in the analysis of Cultural Heritage. For instance, in the process of research and interpretation of Heritage, the LaPa will apply a gender perspective to acknowledge the role of women –and in general of minorities— as social agents.

Quality programme strategies

The LaPa will focus special attention on improving the quality of its internal processes regarding decision-making, data recording, data analysis, publishing and management. This will be pursued through two different kinds of actions. On the one hand, internal quality programmes will be implemented, which will involve the design and documentation of the necessary procedures plus their incorporation as corporate intelligence through the LaPa's Intranet and possibly other collaborative work tools that are being explored. On the other hand, existing industry standards will be adopted, especially in the areas of laboratory data analysis and information recording.

The outcomes of the actions explained above will be documented in an Internal Procedures Manual, which will act as a reference backbone to the research line and the overall organisation of LaPa. A preliminary version of this Manual already exists.

1.4.4. Structural changes

Landscapes:

This sub-line has existed since 1993, and is firmly consolidated. It is proposed to maintain its position exploring specific themes in detail, such as the analysis of Space concepts and their evolution through time, and focusing in more detail on the study of Cultural Landscapes. A particular aim is to introduce Archaeoastronomy as a research theme, as this discipline (which currently lacks any academic institutionalisation in all of Europe) serves to reinforce an approach to the concept of Time and Temporality from a solid basis, which in turn strengthens the study of the concept of Space and its history. The interaction of "Landscape" sub-line with all of the others will be maximized, as the study of the landscape serves to strengthen relations within the Line: see the additional PowerPoint presentation attached in the Media Gallery.

Material Culture

This sub-line has existed for several years. Priority must be given in the distribution of resources in order to consolidate its position within the Line. Special attention will be given to the development of archaeometric capacities, as this also strengthens interrelation within the Line, and in particular with the specialists in Earth Sciences. Also, the same scientific equipment and laboratory facilities are used for archaeometric and geoarchaeological studies. It will be necessary to consolidate the scientific and technician staff for this sub-line.

Rock Art

Special importance has been given to this theme over the last eight years, as a result of the opportunity of being able to carry out important research projects. The completion of these projects makes it recommendable to reduce the attention focused on this sub-line in the past, in order to concentrate efforts on other areas that make it possible to more effectively structure an integral approach towards Heritage. In any case, studies on Rock Art will continue to be a theme for analysis that will be dealt with, depending on their thematic orientation, from the Landscapes or Material Culture sub-lines.

Theoretics

The LaPa research Line is characterized by having a constant concern for theoretical and methodological developments. The senior members of the LaPa have made significant contributions in the fields of Theoretical Archaeology, History, Anthropology, Applied Archaeology and Computing. The importance of these developments in order to serve as the basis for good research practices means that it will be recommendable to concentrate this potential into a sub-line. This will facilitate dialogue between disciplines and make it possible to create crossed theoretical models that are contrasted between different disciplines or sub-lines. This strategy will allow us to be more productive and visible in terms of theoretical developments, and increase the structuring of the Line.

Buildings

This sub-line has existed since 2004. However, it has been essentially focused on specialized services and consultancy work from our expertise on Archaeology of Architecture. This orientation was implemented as a strategy to establish the theme within the LaPa and to generate the expert knowledge, specialized personnel and technical capacity required in order to focus this approach towards Heritage. While these objectives have been already achieved, the current proposal is to incorporate full research functions and an exhaustive study of built space into this sub-line. The scientific and technical staff of the sub-line will have to be consolidated.

Formation Processes

This is an emerging sub-line, created by the incorporation of a permanent scientist recruited from outside into the LaPa. Priority must be given to its consolidation within the Line of the LaPa in order to strengthen the integral approach towards Heritage the LaPa aims to develop as the focal point of its future strategy. Above all, synergies between this sub-line and the others will be promoted: to do so, scientific personnel will be recruited to establish links between this sub-line and others, something that may be achieved both through the Historical Archaeology and the Ethnoarchaeology. In a second stage, the focus will turn to the creation of a full sub-line Unit with personnel in training, and some post-doctoral researchers.

Semantics

This is an emerging sub-line, created by the incorporation of a permanent scientist recruited from outside into the LaPa. Priority must be given to its consolidation

within the Line of the LaPa in order to strengthen the scientific and technical capacities of the LaPa to contribute towards innovative theoretical and methodological developments in Heritage studies. Also, this sub-line will strengthen the structuring of the LaPa, actively contributing towards the maintenance of its computing and software facilities, and developing an Information System as a corporate working tool for the Line. Priority will be given to this sub-line to create and maintain a Heritage Computing Laboratory within the LaPa and to recruit personnel (pre-doctoral and post-doctoral researchers, and technicians) in order to consolidate this sub-line Unit.

Socio-economics

This is a new line proposed for incorporation during the lifetime of the current Strategic Plan. The development of an integral approach towards Heritage also implies considering the sociological and economic aspects of the labour market and professionals connected with Heritage Industries. This is a sub-line of research that is today generally underdeveloped. There are no leading centres that are capable of fully orienting the organisation of this sub-line. For this reason, while being a priority, tentative steps will be taken in this direction. In the medium term of the Strategic Plan, it will be necessary to recruit a post-doctoral researcher and carry out a new PhD on these themes (there is currently one PhD in an advanced state of progress).

Applied Archaeology

In the past this has been a very active sub-line, as revealed by the large number of projects and publications generated from within it. The sub-line had focused on the development of working methodologies and standards that have been transferred to the socio-economic sphere. In this way the LaPa has contributed significantly to the consolidation of the professional market in Archaeology, and activity related to Cultural Impact Assessment. However, it is now necessary to reduce the amount of consultancy work and technical services of the LaPa to focus on innovative research functions. To do so, it is proposed to transfer theoretical and methodological development to each sub-line, support the work of standardising all of them from the “Semantics” sub-line, include these protocols in the Internal Procedures Manual and the LaPa Information System, and create an Archaeological Services Unit (USAr) which will carry out selective projects with enterprises and other social agents and institutions based on a commercial model.

1.4.5. Strategy análisis

The strategy designed in this Plan intends to expand the research line from Landscape Archaeology to Heritage studies. This includes also to change from the present reality of a research group focused on the Laboratory of Landscape Archaeology (LAr), to a new type of research unit based on LaPa (the Heritage Laboratory).

This challenge becomes possible because the conjunction of previous tradition (centered on Heritage) with the recruitment of some new researchers (either in permanent either posdoc positions).

The main difficulty of this strategy could present is the very structuration of LaPa Unit and the articulation of the research line itself.

To avoid such problems, heavy work has been carried on to recognise the potential synergies within LaPa and about the way to create and take advantage of mutual relationships between different research lines. This analysis is better seen under a graphic and dynamic representation. For this reason, it has been included a Microsoft PowerPoint presentation showing the correspondance between research sublines: see the presentation included in the Multimedia Gallery.

2. LaPa Research Sublines

2.1. Landscape Archaeology and Cultural Landscapes

2.1.1. General Information

Name:

Landscape Archaeology and Cultural Landscapes

Description:

The **scientist in charge** of the sub-line is Dr. César Parcero-Oubiña.

Landscape Archaeology is the main and longest-running line of research developed by the LaPa in the past. It has progressively extended to include other problems and areas of research, gradually opening up to include heritage factors and elements as a whole, with particular involvement in the study and valorization of Cultural Landscapes.

Within this sub-line, the landscape is conceptualized as a *socio-cultural product created by the objectivation, with regard to the environment and in spatial terms, of social action of both a material and imaginary nature*. This social action comprises both social practices (working processes, technologies, rites, the pronouncement of discourses etc.), and social life itself (i.e. unintended domains of human living).

Based on this concept, the research strategy applied is integral and multi-disciplinary, as it considers both simultaneously and complementarily the four fundamental dimensions of the landscape: (1) the environmental dimension, resolved in the reconstruction of paleoenvironmental conditions, the interaction between man and the environment, the anthropic effect, and, definitively, the ecological footprint of each society; (2) the social dimension, which reconstructs the relations between humans, groups and communities in and with space, focusing on the spatial dimension of means of subsistence, settlement patterns, and the creation of social territories and frontiers; (3) the cultural dimension, which reconstructs the symbolic conception of the landscape and its intangible forms of use, which includes identifying and analysing sacred landscapes; and (4) the perceptive dimension, which explores the human perception of the environment.

This sub-line combines approaches from different disciplines and specialists: not only Archaeology, but also History, Anthropology, Geography, Geoarchaeology, Earth Sciences, Soil Science and Palynology.

The sub-line maintains a solid balance between theoretical, methodological and empirical research and the technical-scientific application of its results, in order to contribute towards more effective territorial management.

At present, the sub-line is essentially intended to contribute towards comprehending the evolution of the concept of space throughout history.

Key Words:

Landscape Archaeology. Cultural Landscape. Geoarchaeology. Paleoenvironmental studies. Geographic Information Systems (GIS). Spatial Analysis. Social Space. Sacred Landscape. Concept of Space. Monumentality.

General objective of the sub-line:

To study the processes of the human construction of the landscape, examining their relationship with economic, social and cultural dynamics, and characterizing their evolution through prehistory and history. From a more general perspective, it principally aims to discover the concept of space, and secondarily the concepts of time and nature, which guide special human actions and underlie the materialization of the social being in spatial terms; from this perspective, these studies contribute both towards an ecological history of mankind, and to the economic-social history and the reconstruction of modes of rationality and thought in different cultural formations. From a practical perspective, the sub-line aims to identify and characterize the cultural landscapes that may be recognised today and which form a fundamental part of heritage; from this point of view, these studies contribute towards the protection and management of cultural landscapes as a heritage value and present-day resource.

2.1.2. SWOT analysis

Weaknesses

- Difficulty in publishing much of the research work carried out in the appropriate media and with the necessary agility.
- Excessive dominance in the past of functions related to the provision of specialised technical services.

Threats

- Stereotypical and simplistic comprehension by some critics of Landscape Archaeology, who also identify it with a strategy of academic power.

Strengths

- Continuous tradition of research in this line since 1983.
- Development of a theoretical, methodological and empirical corpus, consolidated by previous results and publications.

- National and international prestige in this field of research, as the LaPa is identified as one of the groups that has most actively contributed towards the development of Landscape Archaeology.

Opportunities

- Practical relevance of the interest of and studies on the landscape, as well as debates that are closely related to it: sustainability, urban growth, territorial planning.
- Political, administrative and scientific importance of the concept of the “cultural landscape” as a conceptual device for present-day landscape management. Existence of a European directive on cultural landscapes which must be adapted in different European countries.

2.2. Material Culture and Formalization Processes of Cultural Heritage

2.2.1. General Information

Name:

Material Culture and Formalization Processes of Cultural Heritage

Description:

The **scientist in charge** of this sub-line is Dr. Pilar Prieto-Martínez.

This sub-line of research focuses on the study and heritage management of material culture, through an archaeological perspective based on the theoretical-methodological approaches of landscape archaeology, structuralist anthropology and the anthropology of technology. At the same time, the sub-line has a clearly interdisciplinary nature, gathering the contributions from areas such as Archaeometry, Ethnoarchaeology, Anthropology, History of Art or Iconography.

Although the research covers several types of material culture, the prime focus is on pottery and the metallurgy during the Late Prehistory, from the Neolithic to the Iron Age.

The scientific problem to solve is the description and comprehension of materialization processes, understood as the formalization of social being into particular cultural objects. The main focus is to identify the structural pattern of material culture and how it is related to the spatial concepts functioning in this society. This implies the analysis of the patterns of regularity and change in the material culture, defining the “material style” dominating in each period, determining the conditions of stylistic change and examining the relation of these processes (the origin and transformation of the style) with socio-cultural changes and strategies of the negotiation of social identity.

Special attention is paid to problems such as the internal dynamics and processes of social complexity in ancient societies. This research contributes towards rethinking transitional stages such as the beginning of the Late Neolithic, Neolithic-Bronze Age, or Bronze-Iron Ages. Material objects and materialization

enable us to approach some of the main debates on the societies of these periods: the rise of status and elites, the expression of identities over time, the role of warfare and feasting, the meaning and function of gold ornaments, etc.

Another relevant focus of this research is the ethnoarchaeological study of material culture in current societies with other patterns of rationality, with the aim of obtaining guidelines that help in the interpretation of past communities.

Key Words:

Material Culture. Style. *Châin Opératoire*. Archaeometry. Archaeometallurgy. Pottery. Ethnoarchaeology. Late Prehistory. Commodities. Social Change. Formal Analysis. Biography of Artefacts.

General objective of the sub-line:

The aim of this sub-line is the study of material culture through the archaeological record, linking its transformations with the socio-cultural processes attested in Iberian and European contexts. We attempt to determine how the patterns of regularity and changes of style are linked to processes of socio-cultural change and to strategies of definition of social identity in the past and present communities. To achieve these goals, we are working on the development of (i) a theoretical and methodological framework oriented towards the study of artefacts covering the processes of production, circulation, use and discarding; and (ii) a strategy to combine basic and applied research, in order to generate resources, to transfer knowledge and to provide technical assistance services to the public administration, research institutions and commercial archaeology. It is also necessary to define protocols for archaeometric research, in order to contribute towards the spread of these techniques in Spanish archaeology, and to encourage collaboration between researchers in different disciplines.

2.2.2. SWOT Analysis

Weaknesses

- Lack of scientific staff. There are no scientists with permanent posts.
- Lack of permanent technical staff in sufficient number to carry out the preliminary and laboratory treatment of the archaeological material.
- Slowness in obtaining and publishing results, due to the complexity of the research process.

Threats

- The research involves the collaboration of other bodies (the public authorities have to authorise the analyses, the museums safeguard the pieces, etc.), which do not always work with the desired speed and professionalism.

Strengths

- Innovative line of research at international level, dealing with extensive themes and broad geographic and temporal scopes. Integration in interdisciplinary work.
- The interdisciplinary nature of the LaPa makes it possible to develop approaches that would be less viable in other centres specialising in material culture.
- The projects of the LaPa make it possible to recover well contextualised archaeological material which is then subject to research in the sub-line.
- The LaPa has a unit (integrated in the LaPa Horizontal Services Unit) for the restoration of archaeological material, which permits dialogue between conservation and research work.

Opportunities

- Consolidated relations with researchers from prestigious European institutions.

2.3. Rock Art Studies

No text.

2.4. Theoretical and Historiographic Research on Cultural Heritage Studies

2.4.1. General Information

Name:

Theoretical and Historiographic Research on Cultural Heritage Studies

Description:

The **scientist in charge** of this sub-line is Dr. Lois Armada.

This sub-line focuses on studying the disciplines and practices involved in Cultural Heritage. The sub-line includes the development of theoretical models, historiographic research and reflexive approaches aimed at contributing towards a critical history of Heritage sciences.

Two perspectives are included in this sub-line: firstly, historiographic studies, in which the object of the research is the evolution of the different disciplines associated with Cultural Heritage (Archaeology, History, History of Art, Anthropology and even Architecture), and how the production of knowledge in this area has been dealt with historically (including the genealogy of the concept of 'Cultural Heritage' itself); these studies include, on the one hand, the definition of the successive paradigms and their correlation with the epistemological configuration of these disciplines, and on the other, a contextual approach, focusing on the social, political and cultural conditions in which these disciplines evolved and were developed throughout history. Secondly, this sub-line includes research of a reflexive nature,

which focuses on the current condition of disciplines related to the production and management of cultural heritage. This condition of “actuality” essentially refers to the character of these disciplines as technical-scientific activities (relating to their ontological, epistemological and methodological configuration), and immersed, as cultural practices, in a network of social relations (which implies the integration of the analysis in the area of axiology). Knowledge of the circumstances that constitute the operational field of these disciplines is essential, in order to firstly develop a theoretical reflection concerning their conditions of possibility and their validity as instruments for the management of the social reality and the production of value, specifically, within a part of this reality constituted by Cultural Heritage; and secondly, to create theories and models that allow real and effective action to be taken on this reality, without losing sight of the critical depth of these disciplines.

Key Words:

Theoretical Archaeology. Theoretical Anthropology. Applied Archaeology. Theoretical History. Historiography. Critical Theory. Structuralism. Epistemology. Ethics.

General objective of the sub-line:

The general objective of the sub-line is to determine the circumstances that constitute the operational field of these disciplines, which is fundamental in order to firstly develop a theoretical insight into their possibilities and validity as tools for the management of the social reality and the production of value, specifically, within a part of this reality constituted by Cultural Heritage. And secondly, to create theories and models that allow real and effective action to be taken on this reality, without losing sight of the critical depth of these disciplines.

2.4.2. SWOT Analysis

Weaknesses

- Lack of specialized personnel in the philosophy of science.

Threats

- Possible dispersion of the object of study, considering the wide variety of disciplines involved in the line.

Strengths

- Existence of specific theoretical approaches from other sub-lines of research.
- Wide disciplinary range of the LaPa, which extends the epistemological field of the sub-line.
- External recognition and impact of the research carried out by the group in this field.
- Generalised increase of reflexivist paradigms in the philosophy of science.

Opportunities

- Presence of research centres within the same organisation (CSIC), aimed at the Science-Technology-Society field, and therefore focused towards the social contextualisation of scientific practice.
- Growing international activity in this field of research, which may serve to establish collaborations and projects with other countries, increasing the impact of our contributions.

2.5. Archaeology of Buildings

2.5.1. General Information

Name:

Archaeology of Buildings

Description:

This sub-line is aimed at the study and heritage management of built material culture, from an archaeological perspective which is based on the theoretical and methodological tenets of Landscape Archaeology and the Archaeology of Architecture. Our proposal supports an Archaeology of Built Space, in which the aim has been to combine both perspectives, considering architecture in its spatial, temporal, functional, social and symbolic facets, based on the structural analysis of architecture in all of its dimensions.

The sub-line is of a clearly interdisciplinary nature, including contributions from spheres such as History, the History of Art, the History of Architecture, Architecture, Conservation Sciences and Topography.

The main area of research corresponds to the north-western Iberian Peninsula, giving priority to stages in the Middle Ages and Modern Age, but also including the ancient and prehistoric world, as well as collaborations in other geographical areas. The study focuses on the architectural structures that the societies from these periods created, from domestic space or monumental architecture as isolated elements, to urban centres considered as a system.

This sub-line considers architecture as the anthropic manipulation of a given space using construction technologies that vary over time according to social, cultural and economic factors.

Using stratigraphic analysis, the methodological approach is based on a deconstructive analysis (or “inverse engineering”) of the architecture, which breaks down its constructive sequence. This means that once the generic form of each type of architecture in a specific period of use has been individualised, it is possible to obtain information about the societies that created them.

One of the fundamental aspects of this sub-line is the three-dimensional representation of architecture, using cutting-edge technology such as High Definition Surveying (HDS)

Key Words:

Archaeology of Architecture. Archaeology of Built Space. Space. Spatial Analysis. Stratigraphy. Stratigraphic Analysis. Historical Architecture. Historical Archaeology. Urban History. Medieval Age. Modern Age. Built Heritage. Surveying techniques. High-definition Topography.

General objective of the sub-line:

To understand buildings from an integral perspective that combines the historical, architectural, archaeological, anthropological and artistic perspectives, and which makes it possible to discover their meaning as a social product. To do so, the Archaeology of Architecture focuses on identifying the different constructive and deconstructive processes that have modified the buildings, thereby obtaining the constructive sequence of the final architectural structure we see today. This allows us to access the form of each type of architecture in each specific period of use and to obtain information about the society that created, used or modified, at spatial, temporal, technological, functional, social and symbolic level. The sub-line aims to generate historical knowledge, and based on this knowledge, to contribute towards improving conservation and restoration practices in relation to the protection and enhancement of Built Heritage. Our Archaeology of Buildings aims to facilitate the integral management of Built Heritage.

1- The specific aim of the sub-line is to analyse Built Heritage through detailed case studies, in order to identify the different constructive and deconstructive processes that have modified and transformed the architectural elements, thereby obtaining the constructive sequence of the final architectural element that has survived until the present day. This makes it possible to reconstruct the form of each type of architecture in each specific moment of its use, thereby obtaining relevant information on the functions and meanings of the architectural elements, as well as the society that created, used or modified them, at spatial, temporal, technological, functional, social and symbolic level.

2- The generic objective of this research is (i) to contribute towards the study of the social configuration of space and time, and (ii) to increase the comprehension of Cultural Heritage through the detailed analysis of one of the fundamental groups of elements that integrate it: the spaces, constructions and architectural monuments.

3- In this way, this sub-line contributes towards a substantial increase in the historical knowledge of specific periods, the conservation of Built Heritage, the improvement of restoration practices, and the perfection of models for the integral management of Built Heritage.

2.5.2. SWOT Analysis**Weaknesses**

- Lack of personnel specialised in the analysis of architecture from an archaeological perspective.

Threats

- Strong presence of restoration practices that lack any initial analytical process applied to the building, making it possible to obtain suitable information for the development of a correct architectural project. These also lead to the loss of a large amount of information.
- Insufficient debate between the different disciplines that analyse architecture.

Strengths

- The sub-line has been operating for several years in Galicia. It is currently undergoing a process of consolidation, which has made it possible to see the wealth of information generated by studies of this kind, both in terms of knowledge and for the management of this type of heritage.
- Constant increase within the Galician context of projects involving built heritage that integrate analyses of the architecture from an archaeological perspective in the initial stages.
- Strong interdisciplinary integration between Archaeology, History, the History of Construction or the History of Art.

Opportunities

- This sub-line maintains strong links with other research groups which have introduced, developed and consolidated the study of Architecture through Archaeology in Spain.

2.6. Applied Archaeology and Methodological Developments

2.6.1. General Information

Name:

Applied Archaeology and Methodological Developments

Description of the sub-line

This sub-line includes theoretical and methodological developments oriented towards the application of Archaeology in the management of Cultural Heritage within the framework of different processes of modernisation, conceptualised as preventative Archaeology (Archaeology and town planning, Archaeology and environmental impact evaluation, and archaeological control and monitoring for infrastructure projects), as well as in relation to the socialization of archaeological heritage, by converting it into a resource for economic and cultural development through the implementation of integral heritage revalorization programmes.

Derived from this, the products of the sub-line are considered as those technological developments that are oriented towards the management of the data obtained during applied archaeology interventions (recording, systematization and archiving), as well as innovation in the application of the methodological models that are generated.

Both the theoretical-methodological developments and the technological developments derived from them are articulated through the definition of criteria for intervention, technical specifications for their application, protocols for fieldwork and laboratory work, and protocols for the management of interventions within the framework of the laboratory.

The activity of this sub-line therefore forms a part of the processes for the transfer of the technology and knowledge generated as part of the research process, helping to promote greater social awareness of the institution and scientific activity.

Due to the existence of a sub-line that is specifically oriented towards the production of theoretical developments, which is also susceptible to integrating the theoretical-methodological developments derived from applied research, as well as an Archaeological Services Unit that permits the direct application and comparison of these developments, this is a SUB-LINE TO BE CANCELLED.

Key Words

Applied Archaeology. Preventive Archaeology. Archaeological Methods and Techniques. Archaeological Theory. Archaeological Heritage. Archaeological Record. Archaeological Impact Assessment. Technological Development. Technology Transfer. Knowledge Transfer.

General objective of the sub-line

The sub-line is based on the theoretical-methodological and technological development of an Archaeology applied to the management of archaeological heritage in contexts of modernisation being essential for a more effective protection of this heritage, as well as for the integration of the results obtained in actions of this kind in the global information system, so that they contribute towards sustaining the process of research and the production of knowledge.

2.6.2. SWOT Analysis

Weaknesses

- Dependence on capturing external resources in order to self-finance the sub-line.
- Structural weakness of the personnel: lack of motivation amongst technical staff.
- Historical imbalance between providing services and research: loss of capacity for innovation and market presence.
- Organisational inefficiency in the management of human and technical resources available.
- Incommensurability of the values of the activity with the commercial values it depends on.
- Lack of continuity in training processes (specialisation courses).

Threats

- Administrative inflexibility: excessive centralisation and bureaucracy.
- Economic-financial rigidity: lack of autonomy for the management of own resources, excessive indirect costs.
- Instability of the professional market: difficulty in competing on the open market (lack of competitiveness due to excessive costs)
- Difficulty in capturing external funds without suitable integration between the functions of research and transference.
- Dependence on political situation: possible changes in priorities in terms of scientific and heritage policies.

Strengths

- Interaction with the field of basic or frontier research: innovation potential
- Multidisciplinary and high level of integration between the different teams of the Laboratory
- Single, integrated administrative and financial management of the Laboratory
- Trajectory of the Laboratory in this field: accumulated prestige
- High level of qualification of personnel associated with the sub-line
- High technological infrastructure capacity
- Existence of stable relations with external clients
- Existence of 'new potential': own specialisation courses

Opportunities

- Institutional context of support for the transfer of technology and knowledge (Lisbon objective: competitiveness in the knowledge society): support for human sciences (creation of a CSIC centre for HS and SS) and support for the creation of spin-off companies
- Intensive research project to identify the Laboratory's transfer potential and subsequent packaging of specialised services suitable for offering internally or externally
- New research and market niches made possible by legislative advances in matters relating to environmental, landscape and heritage management.
- Creation of observatories of social interest: sustainability, landscape (GZ).
- Changes in the general state administration that will permit more agile management.

2.7. Processes of Heritage Formation: Memory, Identities and Conflicts

2.7.1. General Information

Name:

Processes of Heritage Formation: Memory, Identities and Conflicts

Description:

El **scientist in charge** of this sub-line is Dr. Cristina Sánchez-Carretero.

This sub-line of research focuses on the study of heritage formation processes in the present and the past; in particular, it concentrates on the relationship between cultural heritage, memory and identity to answer the following questions: What are the mechanisms by which societies produce-accept-counteract their cultural heritage? What is the role of the different social agents involved in these processes? What is the role of cultural heritage in times of crisis?

Cultural heritage is understood as a metacultural process. The cultural heritage of a group is, above all, socially constructed; and its existence and form depends on the meaning and configuration each group applies to itself, its history and culture. The approach presented by this line of research contributes the novelty of focusing on the uses and instrumentalizations of cultural heritage in situations of crisis.

This sub-line proposes studying cultural heritage in a holistic manner, including what the UNESCO has described as “intangible” heritage. Spain ratified the convention for the safeguarding of intangible heritage on the 25th of October 2006, something that will bring about important consequences in the political handling of this type of heritage. For this reason, this sub-line, following the consolidated trajectory of the LaPa in applied research, will develop a critical applied approach that may help to orientate the management of intangible heritage. Both local Galician studies and transnational studies will be included.

This sub-line employs a dual methodological framework: (1) ethnographic fieldwork and (2) historical anthropological approaches to Cultural Heritage.

Key Words:

Cultural Heritage. Intangible Heritage. Conflict. Identity. Memory. Processes of Heritage Formation. Traditionalization Processes. Anthropology. Ethnography. Myths. Ritual. Systems of Thought.

General objective of the sub-line:

To develop a critical body of research on traditionalization and heritage formation processes with the purpose of functioning as consultants for various social agents regarding intangible heritage policies; and implementing protocols for the ethnographic study of cultural heritage.

To develop a line of methodological tools, integrated in the common LaPa Heritage Laboratory Information System for the analysis of intangible heritage.

2.7.2. SWOT Analysis**Weaknesses**

- Reduced critical mass in the LaPa on these subjects
- Thematic and spatial dispersion

Threats

- In the Spanish context, amateurism and lack of professionalisation in the field of the study of traditions dominate the public management of this type of heritage. This situation contrasts strongly with that applied to other types of cultural heritage.

Strengths

- It offers a methodological renewal of these themes, based on the study of “value construction”; from the point of view of the analysis of heritage formation processes.
- Offers a holistic perspective, including the perspective of the various social actors involved in each step of the Cultural Heritage value chain.

Opportunities

- Social and institutional demand for studies into cultural heritage from this perspective.
- Excellent international relations.

2.8. Semantic Technologies for Cultural Heritage

2.8.1. General Information

Name:

Semantic Technologies for Cultural Heritage

Description:

The **researcher responsible** for the sub-line is Dr. César González-Pérez.

This sub-line occurs within a main line of research that will generate and handle, in all probability, large amounts of information over time. The construction of meaning in relation to this information will entail modelling and conceptualising the necessary data structures and methodological approaches, integrating diverse temporalities and subjectivities, and reconciling incompatible data formats and structures. This sub-line responds to these needs by building on top of knowledge engineering and offering a rigorous and holistic solution that avoids the fragmentary approaches that are so common nowadays. In other words, this sub-line will develop the necessary theory to support the technologies that will allow us to manage large amounts of information optimally according to the needs posed by other sub-lines in this Line, paying special attention to the semantic link between the representations of the observed reality (i.e. the information) and the subjects of such representations (i.e. the elements of this reality). Virtual worlds will be used as experimentation ground to explore these semantic links. From an applied point of view, this sub-line will develop advanced software systems for the valorisation, management and enhancement of Cultural Heritage. These developments will solve specific demands that Cultural Heritage projects and industries have often failed to solve by using commercially available solutions from the software industry.

Key Words:

Information technologies. Computing. Semantics. Cultural Heritage. Software. Information systems. Information modelling. Conceptual modelling. Metamodelling. Methodologies. Virtual worlds. User interfaces.

General objective of the sub-line:

To create, select, develop, analyse, validate, demonstrate and disseminate the necessary technologies for the construction of meaning around the information that is generated and handled during work involving research on, and management of, cultural heritage, particularly those that are carried out within this Line.

2.8.2. SWOT Analysis**Weaknesses**

- Few “yardstick” experiences that may serve as point of reference, limited existing works in the field.
- Lack of skilled personnel.
- Inadequate work environment and technical infrastructures.

Threats

- Fast pace of change in many aspects related to information technologies.

Strengths

- Background in software and knowledge engineering and later application to cultural heritage (the converse is commonest).
- Strong interdisciplinary integration (information technologies, cultural heritage).

Opportunities

- The Line's environment provides an ideal “ecosystem” for this sub-line, offering a wealth of information and numerous opportunities of vast diversity and complexity.
- The sub-line's leader has excellent connections with leading knowledge and software engineering groups at several international universities, which permits collaboration between different disciplines.

2.9. Socio-economics of Cultural Heritage**2.9.1. General Information****Name:**

Socio-economics of Cultural Heritage

Description:

This line integrates a series of different approaches towards Cultural Heritage from disciplines that are not linked to the interpretation and management of heritage elements. This includes sociological, anthropological, economic and political investigations into Cultural Heritage. The object of the study is Cultural Heritage itself as a social reality, in its different dimensions within a context marked by the post-industrial society and the transition towards a knowledge-based socio-economy:

Economic dimension: Heritage is analysed both as a relevant economic factor in strongly tertiarized societies, as well as its incidence in the production of wealth (at different scales), its requirements in terms of public investment and other aspects related to the role of Heritage in economic development. This means that the research is also oriented towards an analysis of the economic activity that occurs in relation to Heritage management, through an approach exploring the structure and dynamics of the different technical and scientific disciplines related to this sphere. This implies contributing towards the creation of a Heritage Economy related to Tourism Economy or Environmental Economy.

Sociological dimension: focusing on the social forms of access to Heritage and the sociological characteristics of users and consumers of heritage elements, as well as the internal sociological configuration of the disciplines and practices related to its study and management, including the creation of a heritage “market”, the evolution of its professional sector, and the social strategies of the agents involved with Heritage. Also, the value of Heritage as an element of social cohesion and cultural development is studied.

Anthropological dimension: analysed in symbolic elements and elements of identity, with the main object of the study focused on the forms of social identification with regard to Heritage, and its role as an element that generates community values and discourses of identification.

Legal-political dimension: Heritage is dealt with from the perspective of Political Sciences and Law, both with regard to Heritage as a legal entity per se, and the legal and political context with which it interrelates as a social entity, and to the legal and regulatory conditions affecting the work of the different disciplines connected with its study and management.

Key Words:

Cultural Heritage Economy. Sociology of Cultural Heritage. Heritage Politics. Labour Market. Heritage Industries. Heritage Management.

3. Services of the Centre/Institute

3.1. LaPa Archaeological Services Unit (USAr - LaPa)

3.1.1. General Information

Name

LaPa Archaeological Services Unit (USAr – LaPa)

Description of the service

The Archaeological Services Unit integrates the human and technical resources necessary to carry out specialised archaeological projects, conceived as a technical 'core' that is capable of being extended depending on external requirements.

Its scope of action includes carrying out surface and sub-surface prospecting work, generally within contexts for the evaluation of environmental impact, the execution of impact control programmes in public infrastructure works, intervention in archaeological sites through excavations (both test pits and more extensive surveys, and in both preventative archaeology interventions and projects for the public presentation and socialization of heritage elements), and work related to stratigraphic reading and the analysis of built heritage.

The USAr is conceived as a technical unit for providing specialised services, which functions autonomously at operational level, while being connected to the Laboratory as a whole through the same information system, making it possible to take full advantage of preventative archaeology interventions in terms of the production of knowledge, as well as to put into practice the results of applied research. Also, its participation as a technical unit in numerous research or socialization projects on heritage elements allows it to be highly integrated with the other operative units of the Laboratory.

BECAUSE THIS SERVICE DOES NOT EXIST, there are no economic incomes in the section of Service Indicators. These incomes can be, however, evaluated considering the project funds gotten by the Research Subline on "Applied Archaeology and Methodological Developments", what show very well the potential of this new Service.

Key Words

Archaeological Record. Archaeological Documentation. Surveying. Excavation. Archaeological Methods and Techniques. Archaeological Impact Assessment. Cultural Impact Assessment. Preventive Archaeology. Archaeological Heritage. Management of Archaeological Heritage.

General objective of the service

IT IS A NEW SERVICE. The main aim is to create an External Service Unit what allows LaPa to intensify Knowledge Transfer on Heritage matters with public and

private organisms and, at the same time, to minimize its costs on LaPa pure research functions and working packages.

The general objective of the service is to produce data to support the research process, at the same time as serving as an area for experimentation and the testing of methodological models and technological developments. Also, the provision of services guarantees the autonomous continuity of the unit, without overloading the general programme of the Laboratory with technical work, at the same time as formalizing the Laboratory's capacity for commercialisation and transfer in a clear, organic structure, with a well defined offer of services, receptive to becoming released from this within a reasonable period of time.

3.1.2. SWOT Analysis

Weaknesses

- Dependence on capturing external resources in order to self-finance the sub-line.
- Structural weakness of the personnel: lack of motivation amongst technical staff.
- Historical imbalance between providing services and research: loss of capacity for innovation and market presence.
- Organisational inefficiency in the management of human and technical resources available.
- Incommensurability of the values of the activity with the commercial values it depends on.
- Lack of continuity in training processes (specialisation courses).

Threats

- Administrative inflexibility: excessive centralisation and bureaucracy.
- Economic-financial rigidity: lack of autonomy for the management of own resources, excessive indirect costs.
- Instability of the professional market: difficulty in competing on the open market (lack of competitiveness due to excessive costs)
- Difficulty in capturing external funds without suitable integration between the functions of research and transference.
- Dependence on political situation: possible changes in priorities in terms of scientific and heritage policies.

Strengths

- Interaction with the field of basic or frontier research: innovation potential
- Multidisciplinary and high level of integration between the different teams of the Laboratory
- Single, integrated administrative and financial management of the Laboratory
- Trajectory of the Laboratory in this field: accumulated prestige

- High level of qualification of personnel associated with the sub-line
- High capacity technological infrastructure
- Existence of stable relations with external clients
- Existence of 'new potential': own specialisation courses

Opportunities

- Institutional context of support for the transfer of technology and knowledge (Lisbon objective: competitiveness in the knowledge society): support for human sciences (creation of a CSIC centre for HS and SS) and support for the creation of spin-off companies
- Intensive research project to identify the Laboratory's transfer potential and subsequent packaging of specialised services suitable for offering internally or externally
- New research and market niches made possible by legislative advances in matters relating to environmental, landscape and heritage management.
- Creation of observatories of social interest: sustainability, landscape (GZ).
- Changes in the general state administration that will permit more agile management.

3.2. LaPa Horizontal Services Unit (USH - LaPa)

Name

LaPa Horizontal Services Unit (USH – LaPa)

Description of the Service

3.2.2. General Information

Name:

Horizontal Services Unit

Description:

The Horizontal Services Unit provides the functions and services needed to guarantee the ordinary development of all the research sub-lines and activities within the LaPa. This involves the operation of the structural functions demanded by the daily activity of LaPa, under two conditions: (1) functions that are not carried out by the existing general bodies within the Centre-Institute and (2) functions that are not circumstantial, meaning those that are beyond the specific and short-term needs of concrete research projects and which, as such, should be dependent on the financial resources of each project.

The functions met by the Horizontal Services Unit are:

- Secretariat: project management, financial management, personnel management, administrative relations between LaPa and both the immediate

environment (Institute and CSIC) and external bodies (other institutions, clients, etc).

- Advanced technical support for heritage: topography, CAD, GIS, conservation of objects and structures.
- Technical lab support: information processing, IT maintenance.
- Management of activities regarding dissemination, training and scientific culture.

Key Words:

Secretariat. Project Management. Financial Management. Technical Assistance. Knowledge Transfer. Technology Transfer. GIS, CAD and Topography. Dissemination and Scientific Culture. Laboratory Analysis.

General objective of the sub-line:

To provide the range of technical services needed for the ordinary development of all the existing sub-lines. To become actually capable of solving the structural technical needs of the LaPa (those that are permanent, and not dependent on individual projects).

3.2.3. SWOT Analysis

Weaknesses

- Unsuitability of the available facilities for certain functions. Specifically, physical separation in two buildings a considerable distance apart for both the Unit itself and the LaPa as a whole.
- The incorporation of technicians is still very difficult and slow within the Spanish public R&D system.
- Job insecurity on the part of the Unit's personnel (dependent on project financing for what should be a structural and permanent service).
- For some functions, an imbalance between capacities and demands. A few of the functions that are to be fulfilled currently lack specialized personnel (such as the planning and management of European projects).
- Large number of bureaucratic processes resulting from the LaPa belonging to two institutions: the CSIC and the USC.

Threats

- Emergence of an excessive number of areas of service.

Strengths

- Availability of adequate personnel and means to meet many areas of service.
- Extensive experience and professional trajectories of the personnel.
- Solid technical and administrative relations at different levels.

Opportunities

- Progressive development of an official model for the role of technicians within the Spanish R&D system.
- In relation to the above, the emergence of financial opportunities for the structural support of technical workers.
- Expected simplification of the currently convoluted administrative processes within the CSIC after the recent institutional changes occurred.

4. Justification for the Human Resources requested

The positions requested are intended to contribute towards the strengthening and consolidation of the Line in accordance with the strategy that has been defined.

The **four positions** for **Tenured Scientists** will permit the selective reinforcement of some sub-lines, recruiting researchers who may be Project Leaders (PL), form teams and train young researchers. Their profile would be:

2010: Material Culture and Formalization Processes, needed to consolidate this sub-line, which is very active but currently based on post-doctoral personnel.

2011: Processes of Heritage Formation, needed to reinforce this newly created sub-line, and extend the range of themes it covers, including Historical Anthropology

2012: Geoarchaeology and Archaeometrics, needed to reinforce paleoenvironmental research and consolidate Heritage studies from Earth Sciences and/or Material Sciences.

2013: Landscape Archaeology and Cultural Landscapes, needed to contribute towards reorienting the existing sub-line of Landscape Archaeology towards the study and analysis of Cultural and Historical Landscapes.

The **two positions** of **JAE-Senior** are requested with a similar purpose in mind to that of the positions of Tenured Scientist, although they are reserved for those specialities, such as computing and IT, which have more dynamic and highly competitive professional markets, in which it is difficult to risk civil service positions as their beneficiaries have to have a high level of job mobility; special attention will be paid in relation to these positions towards the recruitment of foreign personnel.

2010: Semantic Technologies for Cultural Heritage, needed to reinforce the capacities of this sub-line in IT developments for Heritage studies and management.

2012: Material Culture and Formalization Processes of Cultural Heritage, with a special focus on archaeometric methodologies.

The **two positions** for **Higher Scientific Officers** are aimed at:

2010: Consolidating the LaPa Horizontal Services Unit by incorporating a professional capable of leading the unit, with a special orientation towards scientific management and organisational work.

2012: Consolidating the LaPa Archaeological Services Unit by recruiting a unit supervisor and Operations Manager, possibly specialised in the Archaeology of Buildings.

The **three positions** for **Intermediate Specialist Technicians** are aimed at:

2011: Reinforcing working and researching capacities in the Archaeology of Buildings and Archaeology of Architecture.

2012: Having a technician for the Paleoenvironment laboratory and for archaeometric analyses.

2013: Having a specialist, possibly trained in Conservation and/or Documentation, to organise the collections, storerooms and archives of the LaPa: this not only includes the storerooms and collections of archaeological material, soils and sediment samples, but also reports, digital archives, photographs, drawings, plans and any documentation used and/or generated by the LaPa as part of its research work.

The **position of Research Assistant**, requested for 2012, is aimed at having a technician dedicated to the systematization of information, as well as entering and maintaining this information in the SILaPa (LaPa Information System).

The **four JAE-Doc positions** are essential for the maintenance and expansion of the research capacities of the LaPa through the recruitment of young, highly skilled personnel who can complete their training and be Project Leaders (IP); in line with the General Strategy and Structural Changes proposed, they would be destined to the following sub-lines:

2010: Semantic Technologies for Cultural Heritage.

2011: Socio-economics of Cultural Heritage; this position is especially necessary for recruiting an post-doctoral candidate who can orientate their curricular experience towards covering this research topic, as it is a line that is not fully developed within the LaPa nor frequent in other research centres. Precisely for this reason, and due to the introductory nature of this sub-line, it would be premature to propose the creation of a position for a Tenured Scientist at this stage.

2012: Landscape Archaeology and Cultural Landscapes, with special skills in GIS technologies and programming.

2013: Theoretical and Historiographic Research on Cultural Heritage Studies.

The **four JAE-Predoc positions** are focused towards the training of new research personnel, according to the following priorities in terms of sub-lines:

2010: Processes of Heritage Formation: Memory, Identities and Conflicts.

2011: Geoarchaeology and Cultural Landscapes.

2012: Semantic Technologies for Cultural Heritage.

2013: Socio-economics of Cultural Heritage.

The **four JAE-Tec positions** are intended to strengthen the analytical and instrumentation services of the LaPa, and to train technical personnel in the following lines:

2010: LaPa Horizontal Services Unit, particularly in Advanced Topography.

2011: LaPa Horizontal Services Unit, particularly in GIS and Remote Sensing.

2012: Paleoenvironmental Laboratory.

2013: LaPa Archaeological Services Unit, particularly as an excavations technician.