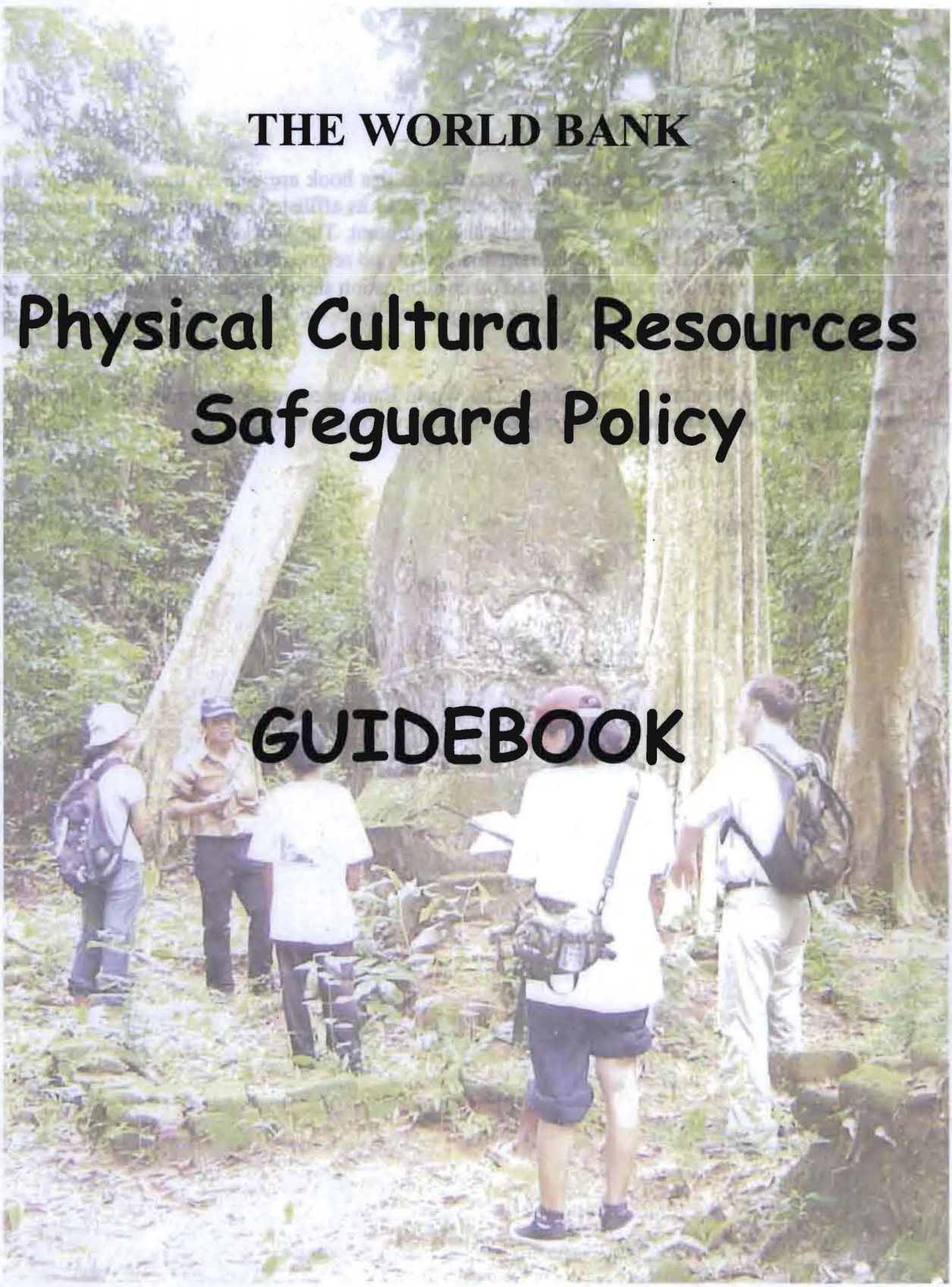

THE WORLD BANK

Physical Cultural Resources Safeguard Policy

GUIDEBOOK

First edition, March 2009

CONTENTS

ANNEXES

LIST OF ABBREVIATIONS

BP	Bank Procedures
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESMF	Environmental and Social Management Framework
FI	Financial Intermediary
ICOM	International Council of Museums
ICOMOS	International Council on Monuments and Sites
ISDS	Integrated Safeguards Data Sheet
NGO	Non-Governmental Organization
OP	Operational Policy
PCD	Project Concept Document
PCR	Physical Cultural Resources
PIP	Project Implementation Plan
TBD	To be Determined
TOR	Terms of Reference
TT	Task Team
TTL	Task Team Leader
UNESCO	United Nations Educational, Scientific and Cultural Organization

Preface

The aim of this Guidebook is to facilitate the implementation of the World Bank's safeguard policy, *Physical Cultural Resources*, set out in Operational Policy (OP) 4.11 and Bank Procedures (BP) 4.11. It is intended for use by all those involved in safeguarding physical cultural resources from potential negative impacts of development projects. Potential users of the Guidebook may include World Bank Task Teams and their counterparts responsible for implementing the policy, Environmental Assessment (EA) practitioners, and those responsible for assessing proposals for EAs, or for reviewing EA reports, in respect of the physical cultural resources component.

The guidance provided here is consistent with the World Bank's policy, *Environmental Assessment*, OP/BP 4.01 (1999). It has drawn upon the World Bank's earlier guidance in the form of *Technical Paper No. 62*, entitled, *The Management of Cultural Property in World Bank-Assisted Projects: Archaeological, Historical, Religious and Natural Unique Sites* (1987), the *Environmental Assessment Sourcebook* (1991) (now out of print), the EA Sourcebook update entitled *Cultural Heritage in Environmental Assessment* (as reissued in 1996), the *Pollution Prevention and Abatement Guidebook* (1998), and upon published literature on PCR and good EA practice, listed in the Bibliography.

The Physical Cultural Resources safeguard policy procedures require EA to incorporate coverage of physical cultural resources. However, the professionals called upon to help prepare Terms of Reference for the commissioning of EAs, or to review EA reports, are often unfamiliar with the topic of physical cultural resources. Furthermore, the EA team members charged with addressing the physical cultural resources component are sometimes themselves not specialists. Thus the text of this Guidebook is written not for the professional archaeologist, anthropologist or historian, but for the lay person.

This Guidebook replaces the Section entitled, 'Cultural Property' in Chapter 3 of the *Environmental Assessment Sourcebook, Volume I* (1991), and *Environmental Assessment Sourcebook - Update Number 8*, entitled, *Cultural Heritage in Environmental Assessment* (1994 and 1996).

Acknowledgements

This Guidebook was prepared by Ian Campbell, with assistance from Charlotte Bingham, Arlene Fleming, Nicole Glineur, Stephen F. Lintner, Geoffrey Read, and L. Panneer Selvam. Useful inputs were also provided by Clark Dobbs. Photographs appear courtesy of Katrinka Ebbe, Ekkaphone, Ian Campbell, ICOM, IUCN, Gaurav Joshi, www.cittadinu.stumbleupon.com, www.commons.wikimedia.org, www.huttoncommentaries.com, www.mgs.md.gov, www.travel-images.com, www.uganda.co.ug, www.sdnhm.org, www.zanzinet.org.

How to Use this Guidebook

This objective of this Guidebook is to facilitate implementation of the World Bank's Physical Cultural Resources (PCR) safeguard policy, according to the provisions of *Operational Policy OP 4.11*, which sets out the requirements of the policy, and *Bank Procedures BP 4.11*, which provides guidance to Bank staff for implementing the policy. It is intended primarily for World Bank Task Teams (TTs), borrowers and Environmental Assessment (EA) practitioners.

Chapter 1 is recommended for all readers. It is designed to provide an overview of the definition and nature of PCR, and the key principles of the safeguard policy.

Chapters 2–5 are written largely as 'stand alone' chapters. Nonetheless, it will be useful for readers to dip into the other chapters. For example, Task Team members should be familiar with the work of the EA team, and EA practitioners should know what EA reviewers will be looking for.

The PCR safeguard policy is set out in Annex A, accompanied by a list of common PCR.

Annex B contains information on typical adverse impacts on PCR by various project types, and includes general guidance on identifying potential adverse impacts from common project activities. It is hoped that these guidance notes will provide a useful 'jump start' for Task Teams and EA practitioners with little or no experience in this subject.

Annex C provides assistance in preparing key documents that may be required, while Annex D presents important reference material, including World Bank *PCR Country Profiles*, a new instrument designed to facilitate implementation of the policy.

* * *

CHAPTER 1

THE PHYSICAL CULTURAL RESOURCES SAFEGUARD POLICY

This is a presentation of the key features of the policy, in summary form. The policy documents are set out in Annexes A1 and A2.

1.1 DEFINITION

> This policy addresses physical cultural resources,[1] which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or underwater. Their cultural interest may be at the local, provincial or national level, or within the international community.
> — *OP 4.11, para. 1*

Note that the definition of Physical Cultural Resources (PCR) is quite wide, and spans items of cultural interest from the community to the international level. Annex A3 contains a list of common types of PCR which are typically encountered.. This list is not exhaustive, but it illustrates the diversity of PCR.

1.1.1 Why "Physical" Cultural Resources?

The definition covers all types of tangible cultural heritage. There are also intangible cultural resources, such as language, poetry, music, dance and intellectual knowledge. Important though these aspects of human culture are, they are not covered by this policy.

1.1.2 Not all PCR are human-made

PCR are often natural features, such as a sacred grove of trees, a cave or holy waters, which have become culturally important to a particular community or religion. They can also include items which are partly human-made and partly natural, such as a cemetery, or a garden.

Fig. 1: Sacred groves are common in many countries. This is the Osun-Osogbo sacred grove, in Nigeria.

1.1.3 PCR often relate to living culture

PCR are often part and parcel of a living culture, and must therefore be addressed in their socio-cultural context.

1.1.4 PCR are often unregistered, and not shown on maps

Official inventories maintained by cultural authorities are commonly limited to monumental buildings of national interest, and established archaeological sites. In some cases they are also out-of-date. Thus PCR which may be affected by development projects are frequently not identified on government inventories nor on official maps.

[1] Also known as 'cultural heritage', 'cultural patrimony', 'cultural assets' or 'cultural property'.

Fig. 2: Although known to the local people, these abandoned temple ruins discovered during an EA survey in the Republic of Lao were not registered, and were unknown to the cultural authorities.

1.1.5 PCR may not be obvious; they may not even be visible

Many PCR are indistinguishable from other biophysical or human-made features, because their cultural importance arises only from the cultural significance attributed to them by the values, beliefs or practices for example, by the local community, or by scholars. They may even be invisible, such as an undiscovered archaeological site.

1.1.6 Some PCR are movable

The policy covers movable artifacts, such as manuscripts, paintings, carvings, archaeological artifacts and historic objects. Apart from the possibility of impacts on movable PCR, such as air pollution and water damage, implementing a major project in a previously inaccessible and undeveloped region can facilitate wider access to unprotected movable artifacts. This usually increases the number of migrant workers or visitors, who may provide a ready market for such treasures.

Eventually this situation can develop into an illegal market of international scale, as has happened in, for example, in some countries in the Middle East, Southeast Asia and West Africa. In some cases, pieces are broken off immovable PCR to become movable PCR, which are then illegally exported.

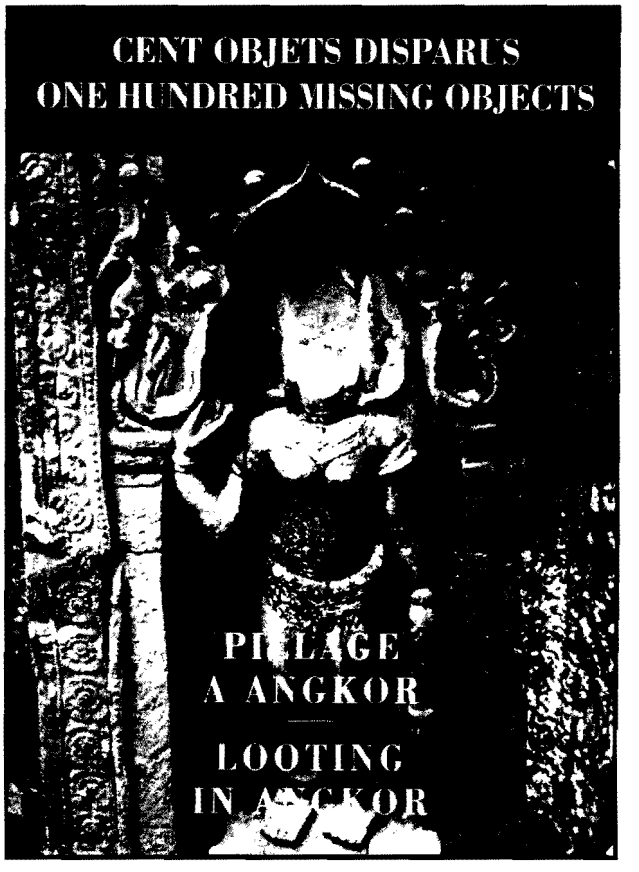

Fig. 3: The theft and illegal sale of artifacts from the temples of Angkor, Cambodia, has become so serious that the International Council of Museums (ICOM) publishes details of the missing items to alert the international community.

1.2 WHY PCR ARE IMPORTANT

> Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.
> — *OP 4.11, para 2.*

Important though PCR are, the importance of *safeguarding* PCR goes beyond simply avoiding the loss of something valuable. It is in the nature of PCR that once lost, they cannot be replaced. Their loss represents a permanent reduction in local or

national patrimony, and even a loss for humanity. Such loss is therefore to be avoided or mitigated.

Furthermore, it is important to realize that in many of the Bank's borrower countries, PCR do not represent curiosities or elitist interests; rather, they are often part of the life of the people.

PCR may also have significant value for socio-economic development. It is widely recognized, for example, that PCR can have considerable tourist potential, with up to 50% of tourists making their destination decisions in large part because of their interest in visiting PCR.[2] But good management of PCR can also, for example, be a valuable means of providing affordable housing, and revitalizing urban centers. In fact for some of the Bank's client countries, such as Cambodia, Georgia and Ethiopia, cultural heritage constitutes a significant sector for national development, as well as a source of national pride.

Fig. 4: The once neglected nineteenth century Ithnasheri Dispensary in Zanzibar is now the Old Stone Town Cultural Centre.

PCR often have considerable socio-political importance, especially during a post-conflict or post-emergency reconstruction period. Equally, governments are often aware of the political consequences of damage to PCR, whether deliberate or inadvertent, which might impinge upon ethnic, religious or other values.

[2] The World Bank, 1989, p. 12.

1.3 THE OBJECTIVE OF THE POLICY

> The Bank assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects[3] that it finances.
> — *OP 4.11, para 3.*

The policy has been developed to provide guidance and procedures for addressing potential impacts on PCR in the design and implementation of projects and to support safeguarding of the nation's PCR. The emphasis is not on rejecting projects that might have impacts on PCR, but on finding ways and means of enabling projects to move ahead, while adequately safeguarding the nation's PCR.

1.4 IMPLEMENTATION THROUGH THE EA

> The borrower addresses impacts on physical cultural resources in projects proposed for Bank financing, as an integral part of the environmental assessment (EA) process. The steps elaborated below follow the EA sequence of: screening; developing terms of reference (TOR); collecting baseline data; impact assessment; and formulating mitigating measures and a management plan.
> — *OP 4.11, para 4.*

This provision states that implementation of the policy is through the EA. No additional reports are required, over and above those required by the Bank's EA policy (OP/BP 4.01). The PCR policy simply requires that at each stage in the EA, due attention is paid to PCR, and that provision be made for monitoring and for the discovery of chance finds where appropriate (See Section 3.7.4 and Annex C3).

This approach is designed not only to make policy implementation as simple as possible, but to ensure that the PCR component of the EA is integrated closely with the economic, financial,

[3] The project is described in Schedule 2 to the Loan/Credit Agreement. This policy applies to all components of the project, regardless of the source of financing.

institutional, environmental, social and technical analyses of a proposed project.

1.5 WHY SHOULD THE PCR STUDY BE INTEGRATED INTO THE EA?

(i) Firstly, the importance of addressing PCR through the EA lies in the fact that EA considers the PCR in context — not in isolation — and provides a flexible management tool for balancing the requirements of conservation and development.

Since impacts on PCR are caused by social and/or biophysical changes, an understanding of the nature and extent of these changes is required if PCR impacts are to be adequately predicted.

(ii) Thus it is essential that close liaison is maintained between the PCR team member(s), and those dealing with the social and biophysical components of the EA.

(iii) Some of the most serious impacts arise from cross-sectoral linkages, which may not be obvious to the PCR team member. For example, changes in the water-table might affect PCR some distance from the project site — a fact to which the PCR specialist might be oblivious unless he or she discusses the potential impacts with other members of the EA team and project engineers, preferably on site.

It should also be noted that research into living-culture PCR is usually best conducted as part of the socioeconomic and demographic survey. Not only will joining forces minimize inconvenience to the local people, but the fieldworkers concerned are likely to have the necessary local language capability and social skills to support the PCR research.

1.6 TO WHICH PROJECTS DOES THE POLICY APPLY?

The policy applies to:

- Projects involving significant excavations, demolition, movement of earth, flooding, or other environmental changes;
- Projects located in, or in the vicinity of, recognized cultural heritage sites, and
- Projects designed to support the management or conservation of physical cultural resources.

Fig. 5: This palace in Sheki, Azerbaijan, was damaged by using unsuitable materials during renovation by a cultural heritage project.

If impacts on PCR are the *only* likely potential adverse impacts identified at screening stage, the project should be categorized as a 'B', and the potential adverse impacts are then addressed through a 'B'-level EA, tailor-made to focus on PCR.

1.7 WHO DECIDES ON THE VALUE OF PCR?

It is sometimes assumed that it is necessary to ascribe an absolute value to a PCR, and to evaluate it *versus* the financial or economic advantages of going ahead with the project, on a traditional cost-benefit basis. However, this is not usually necessary in EA. In the vast majority of cases,

modest mitigating measures can be designed to offset potential negative impacts, whether they threaten flora, fauna, PCR or any other element of the environment.

Furthermore, financial or economic evaluation of PCR can be counter-productive at the EA stage. Not only is it usually very difficult to reach consensus on the 'value' of PCR, but to attempt to do so may cause offence, shine an unnecessarily strong and contentious spotlight on the PCR, and polarize the concerned parties and the project proponent into opposing camps. Such developments can quickly become major obstacles to project progress, and are to be avoided.

Thus the PCR policy does not require the valuation of PCR as such. It does, however, require the EA team to assess the cultural significance of the PCR concerned, and to identify the level at which the PCR is recognized — for example, at local, municipal, national or international level.

By addressing the PCR question at an early stage in the project cycle, agreement can usually be reached on how the PCR can be managed, to the satisfaction of the concerned parties, while there is still time to modify the project design and implementation program, and before it has had the opportunity to become a contentious issue. In this way, the policy seeks to avoid acrimonious 'trade-off' situations, in which the net benefits of a project are pitted against the 'value' of specific PCR.

There are, nonetheless, occasions where PCR valuation is a useful contribution to the assessment of significance, for example in cases where the PCR is an actual or potential tourist destination. For this purpose there are several techniques available, including those used in environmental economics and in historical site evaluation.[4]

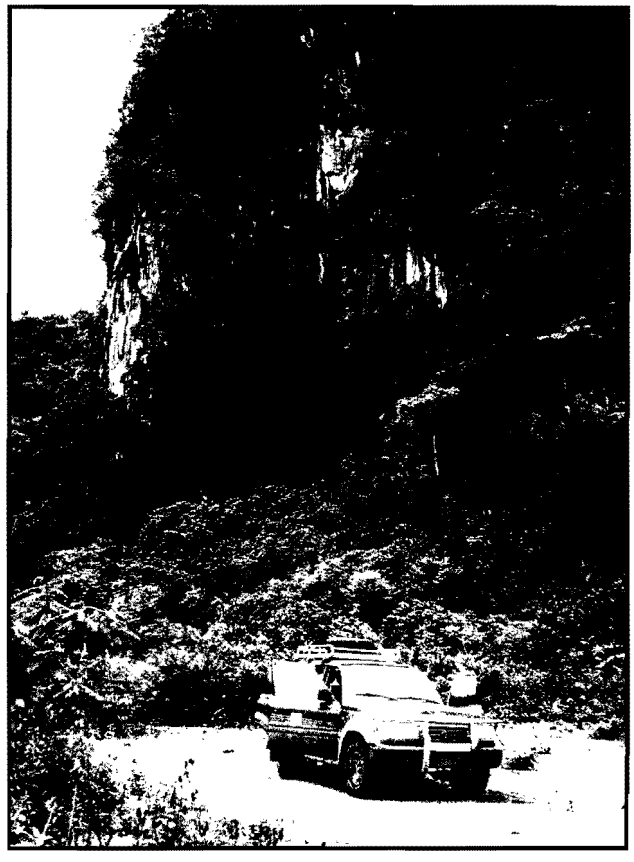

Fig. 6: Situated in an area where there is as yet little tourism, this limestone outcrop nevertheless has great importance to the local people, who believe that their community is overseen by a spirit that dwells at the top.

1.8 THE NEED FOR EARLY ATTENTION TO PCR

The Bank PCR Procedures begin with the statement:

> Physical cultural resources may not be known or visible; therefore, it is important that a project's potential impacts on physical cultural resources be considered at the earliest possible stage of the project planning cycle.
> — *BP 4.11, para 1*

The earlier PCR are identified and addressed, the less likely they are to become a contentious issue. But there is another reason why PCR must be considered as early as possible: the fact that they are frequently not obvious to the layman or casual observer, and therefore may be overlooked until it is too late. Typically, this happens either because

[4] See Bibilgraphy in Annex D2 for published works on this subject.

the PCR are not recognized as such, or because they are physically hidden from view, such as a buried archaeological site. For these reasons, PCR are more likely to be overlooked than other physical environmental features such as, for example, flora, fauna or wetlands. Since it takes time to excavate or investigate such PCR, the process should begin as early as possible.

1.9 The Importance of On-Site Inspection and Public Consultation

As discussed in Section 1.1, PCR cover a wide range of features, and they are often not registered by the authorities; indeed, the authorities may not be aware of them. Furthermore, the PCR may not be obvious to the viewer, and may not even be visible.

It is then apparent that although basic information on PCR in a project area is very useful at the outset, neither the Task Team nor the EA team should rely exclusively on published information to bring to light the PCR which might be affected by a project. There is no substitute for on-site investigations, including, above all, consultation with the parties whose cultural values bring about the designation of resources as PCR.

Thus the policy stresses the need for on-site investigation, and calls for consultation at each stage in the EA process.

1.10 Dealing with Chance Finds

The policy requires the project management plan to include procedures for dealing with PCR which may be encountered unexpectedly during project implementation (OP 4.11, para 9, and BP 4.11, para 11). Such procedures normally involve collaboration with the authorities legally responsible for dealing with such chance finds. In some cases they may include having an archaeologist on site, and will typically incorporate a 'rapid response' arrangement designed to minimize disruption to the project. Annex C3 contains guidance on designing chance finds procedures.

Fig. 7: Example of a chance find: This tomb was exposed when a pipe trench was being cut in Bolivia.

1.11 The Need for Capacity Building

> When the borrower's capacity is inadequate to manage physical cultural resources that may be affected by a Bank-financed project, the project may include components to strengthen that capacity.
> — *OP 4.11, para 16.*

Provision for projects to include capacity building for policy implementation support is already included in the World Bank's *Environmental Assessment* policy. This is often important in the context of PCR, because in many countries, the cultural resources authorities are unfamiliar with EIA procedures, and have yet to be mainstreamed into the development process.

Thus there is frequently a need for the project to include capacity building to facilitate policy implementation. This requirement will often be in

the area of PCR inventory and mapping, human resource development and the development of rapid response systems for handling chance finds.

1.12 Disclosure of Sensitive Information

> The findings of the physical cultural resources component of the EA are disclosed as part of, and in the same manner as, the EA report. [5] Exceptions to such disclosure would be considered when the borrower, in consultation with the Bank and persons with relevant expertise, determines that disclosure would compromise or jeopardize the safety or integrity of the physical cultural resources involved or would endanger the source of information about the physical cultural resources. In such cases, sensitive information relating to these particular aspects may be omitted from the EA report.
> — *OP 4.11, para 12.*

The findings of the PCR component of the EA are normally included in the EA report. However, it is sometimes advisable that information on the precise location of valuable or sacred PCR are not published. Experience has shown that in the case of movable artifacts, this can lead to theft or illegal sale of the items concerned. In the case of sacred PCR, disclosure can cause offence and danger to the informants.

Thus the PCR policy and the World Bank policy on Disclosure of Information provide a mechanism for the borrower, in consultation with the Bank, and relevant experts, to consider limiting disclosure.

1.13 Positive Impacts of Projects on PCR

Implementing this safeguard policy may have unexpected positive impacts on PCR. Apart from the obviously beneficial effect of mitigating measures in conserving PCR for future generations, there have been cases where discoveries of nationally and even globally important PCR have been made during the investigations. For example, some of Georgia's outstanding national treasures were found by the investigating team during the EA of a pipeline project.

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[5] See *The World Bank Policy on Disclosure of Information*, 2002, paragraph 31.

CHAPTER 2

GUIDANCE FOR THE WORLD BANK TASK TEAM

The guidance in this chapter follows the project cycle terminology of the World Bank, and assumes familiarity with the World Bank's *Environmental Assessment* policy, OP 4.01.

Apart from the socioeconomic and cultural importance of physical cultural resources (PCR), which was highlighted in the last chapter, there are two critical aspects of PCR which have influenced the development of the policy, and which are recurrent themes throughout this Guidebook:

(i) The extent of controversy and sensitivity which may be engendered should PCR be threatened or harmed;
(ii) The ease with which PCR can be inadvertently overlooked.

Hence it is important not only to be aware of potentially affected PCR as early as possible, but to bear these issues in mind throughout the project cycle, and to ensure that the borrower is aware of the provisions of the policy, and their application within the Environmental Assessment process.

2.1 PROJECT IDENTIFICATION

Once a project has been identified, the Task Team creates a *Project Concept Note* (PCN) which is a brief internal document outlining the basic elements of the project, its proposed objective, likely risks, alternative scenarios to conducting the project, and a likely timetable for the project approval process.

(i) The following steps are recommended to ensure that the PCN anticipates the applicability of the PCR policy, and identifies any major potential PCR issues, given the nature and proposed location of the project:
(ii) Refer to Annexes B1 to B6 of this Guidebook for information on possible impacts on PCR, according to project type;
(iii) Check with the local cultural authorities and PCR legislation to determine whether potential PCR issues might be sufficiently important to suggest an alternative location;
(iv) Refer to the respective World Bank *PCR Country Profile*, when available. The Profile contains basic country facts, and provides a brief geographic, historic and socio-cultural overview, which is essential reading as it sets the context for implementing the PCR policy. The Profile also indicates the type of PCR that might typically be affected, depending on project location, and contains information with which to determine whether the project site is close to, or even within, a UNESCO World Heritage site.

Any significant potential PCR issues are to be mentioned in the Project Information Document (PID), which is based on the PCN and the outcome of its internal review. Note that the PID is publicly disclosed.

2.2 PROJECT PREPARATION

2.2.1 Screening

One of the first steps in the Project Preparation phase is a provisional determination of the environmental category, referred to here as 'Screening'.

The PCR policy applies to projects having any one or more of the following three features:

(i) Projects involving significant excavations, demolition, movement of earth, flooding or other major environmental changes;
(ii) Projects located within or in the vicinity of a recognized PCR conservation area or heritage site;
(iii) Projects designed to support the management or conservation of PCR.

As stated in Section 1.4 above, the PCR issues are addressed through the EA process, which applies whenever the project is categorized as an 'A' or a 'B'.

Note that if PCR impacts are the *only* likely negative impacts identified at screening stage, then the project is usually classified as environmental category 'B' and the TOR for the EA focuses solely on PCR.

After the PCN has been approved, the EA category, which is subject to finalization at Appraisal stage, along with any notable PCR issues, is reported in the Concept-stage *Integrated Safeguards Data Sheet* (ISDS). Note that the ISDS is a public document.

2.2.2 Developing TOR for the EA

It is the borrower's responsibility to prepare TOR for the EA, and guidance for this task is set out in Section 3.1 and Annex C1 of this Guidebook. The Task Team's responsibility is to provide any assistance that the borrower may require in this respect and may include the following important tasks:

(i) Ensure that the EA TOR focus on issues and areas where potential impacts on PCR are likely to occur;
(ii) (Provide copies of this Guidebook (especially Section 3) and the relevant *PCR Country Profile* (when available) to the borrower;
(iii) Ensure that the borrower provides information about national legislation on cultural heritage and on EA or EIA, and guidelines, if any, for addressing PCR issues in EA. The policy requires that Bank staff request the the borrower to "inform the Bank of the relevant requirements of its legislation pertaining to the management of physical cultural resources, including provisions for the management of chance finds". (BP 4.11, para 4);
(iv) Ensure that the EA report includes a PCR section, even if no major PCR impacts are identified in advance, that outlines the measures taken to determine the status of PCR.

In some cases — especially large and complex projects located in poorly documented areas - it may not be possible to identify in advance the PCR impact areas and the type of PCR data that needs to be collected. In such cases, the TOR for the EA should mandate the EA team to establish these parameters at the beginning of the assignment, and propose the detailed work plan in an Inception Report.

In addition, the EA report should describe the borrower's capacity to implement the recommended mitigating and monitoring measures.

2.3.3 Procedures for Special Cases

The EA Report has already been completed:

Sometimes a stand-alone PCR impact assessment is necessary, typically because the Bank has become involved in a project after it has been designed and the EA has been executed — sometimes with inadequate attention to PCR. In such cases, it will be necessary to modify the EA TOR to limit the study to PCR alone.

Project Implementation has already begun:

In cases where the Bank is financing part of a project, or a sub-project, after implementation has begun, it may be necessary to conduct a PCR survey and salvage at the same time. An example of TOR for this type of work — focused mainly on archaeology — is set out in Annex C2. Sometimes it is necessary to conduct a survey and implement the mitigating measures in parallel, as the project moves ahead, particularly in the case of linear projects, such as a pipeline or highway.

Projects with undefined Sub-projects:

Sometimes a project consists of several sub-projects, some or all of which are undefined at the time of project design, and may remain undefined until after approval of the loan. Such projects include those in which the Bank provides funds to participating national banks, credit institutions and other financial intermediaries for on-lending to final borrowers, in which case the project is categorized as a financial intermediary (FI) project. Since there is insufficient information to enable EAs of these sub-projects to be produced before loan approval, it is common practice for the borrower to develop an Environmental and Social Management Framework (ESMF), setting out procedures for complying with the safeguard policies when the sub-projects reach identification and design stage. Further guidance is provided on this subject in Section 3.6 of this Guidebook.

2.3.4 Monitoring the EA

The essential elements of the PCR safeguard policy in terms of the EA are set out in Chapter 4, *Guidance for the EA Team*, and Chapter 5, *Guidance for EA Reviewers*.

The following two topics will ideally be addressed while the EA report is in its early stages, rather than waiting until the final draft:

Capacity Building: As the likely impacts and recommended mitigating measures emerge, the EA team should note the requirement to assess borrower capacity to implement the recommended mitigating measures;

Disclosure: Sensitive information regarding the nature and location of PCR that is likely to endanger the PCR or associated informants should ideally be identified. .The borrower, in consultation with the Bank, and relevant experts, may consider limiting disclosure to omit such information.

2.2.5 Reviewing the EA Report

The principal issues to look for in assessing compliance with OP 4.11 are set out in Chapter 5, *Guidance for EA Reviewers*.

While a formal 'sign-off' by the cultural authorities in the borrower country may not be a legal requirement in all cases, it is recommended that such authorities be given an opportunity to review the EA report, and confirm that they are in agreement with the recommended mitigating measures.

Note that in cases where archaeologists have been employed on the EA team, they may expect that there will be funds made available to publish their findings. However, such publication is normally in excess of what is required under the EA, and unless such an agreement has been reached with the borrower, in terms of both authorization and funding, this will not normally be possible. Thus in cases where this issue arises,

it should be discussed with the borrower at the outset (see Annex C4).

2.3 PROJECT APPRAISAL

2.3.1 Appraisal

If there are major impacts on PCR expected, the appraisal team should include a PCR specialist. However, if there are no major PCR issues, the PCR aspect can normally be handled by safeguards staff with knowledge of PCR issues and policy.

2.3.2 Preparing the Draft Project Appraisal Document (PAD)

If there are significant PCR issues in the EA report, these should be set out in the draft *Project Appraisal Document* (PAD), together with a summary of the PCR management plan.

2.3.3 Preparing the Project Operational Manual

When advising the borrower on the preparation of a Project Operational Manual:

(i) Check that the concerned cultural authorities have agreed to the scheduling of the proposed mitigating measures, especially if they involve granting archaeological permits;
(ii) Check that the scheduling of such mitigation works takes into account the weather pattern;
(iii) Check that any institutional strengthening measures take into account the absorptive capacity of the institutions concerned;
(iv) Ensure that the resources and arrangements for the proposed chance finds procedures are built into the implementation schedule, including a chance finds monitoring system; and
(v) Where the project is being implemented in a culturally-sensitive area, check that there are arrangements for archaeologists to directly monitor the civil works.

2.3.4 Preparing the Draft Loan Agreement

Make sure that the critical elements of the PCR management plan, including chance finds procedures, if required, are included or cross-referenced in the Loan/Credit Agreement.

Note that chance finds procedures should be incorporated in construction contracts, as applicable.

2.4 PROJECT SUPERVISION

2.4.1 Participation of PCR Specialists in Supervision

During the supervision missions, the PCR management plans and chance-find procedures need to be monitored for their effective implementation. Where there are significant PCR issues, it will be necessary to include adequate staff time and budget for effective supervision by PCR specialists.

2.4.2 Chance finds procedures

It is possible that unexpected impacts on PCR will occur during implementation, particularly if there are chance finds, in which case it may be necessary to revise or add to the PCR management plans. Also, the supervision team is required to monitor effective implementation of chance finds procedures included in the construction contracts, as applicable.

Where archaeological investigations are required to proceed *during project implementation*, such as in the case of linear projects such as a pipeline, the significance of the findings and the recommended mitigating measures should be reviewed regularly by the relevant national or local archaeological authority. In some instances, this process may involve independent experts.

2.4.3 Supervision Reporting

Where there are significant PCR issues, the status of implementation of PCR management plans is to be included in the Implementation Status Report (ISR). Any significant implementation issues and remedial actions agreed upon, may be highlighted in the aide-memoire and in the management letter, as appropriate.

2.5 PROJECT COMPLETION

In case of projects with significant PCR issues, Implementation Completion reports (ICR) are required to include an assessment and review of the effectiveness of the PCR management plans, chance finds response procedures and capacity-building activities, as appropriate. Also, it is recommended to include a summary review of overall compliance with OP/BP 4.11 and relevant national legislation as well as lessons learned for future projects.

CHAPTER 3

GUIDANCE FOR THE BORROWER

The borrower is responsible for developing the TOR for the EA, for identifying in the TOR the necessary types of experts to carry out the EA, and for ensuring that it is conducted as required. Together with the Bank, the borrower also reviews the EA report, in order to ensure that it has met both country and Bank requirements.

3.1 DEVELOPING TOR FOR THE EA

It is the borrower's responsibility to prepare the TOR for the EA, a process in which the Bank Task Team is available to assist.

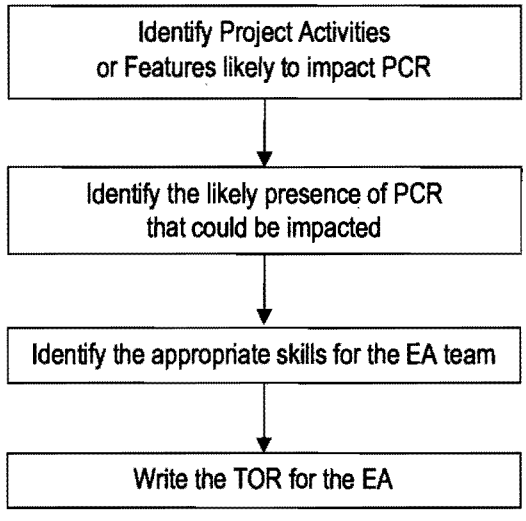
The TOR should be consistent with the EA category given to the project during the screening process (see Section 2.2.1).[6]

Note that there may be country-specific issues which need to be taken into account, such as regulations specific to certain types of PCR, or to certain parts of the country, such as designated heritage conservation areas. In order to reflect such issues, it is recommended that the TOR be developed in liaison with the appropriate cultural heritage and/or religious authorities.

Determining the scope of work of an EA normally benefits from an on-site visit involving the project sponsor and some concerned and potentially affected parties. The project is reviewed in terms of major potential impacts. This is generally followed by identification of the information required, the timeframe and likely cost of conducting the EA.

For the PCR component, there are four basic steps involved in determining the scope of work to be undertaken:

Determining the Scope of Work of the PCR Component of an EA



Commissioning a survey to identify the likely presence of PCR that could be impacted at the outset is a common error. Until it is established what type of impact is likely, the EA team will not know what area to study.

The key activities under each step are as follows.

3.1.1 Identifying Project Activities or Features most likely to impact PCR

It is necessary to identify activities or features of the project which are likely to impact PCR. A list of project activities and features which often impact PCR can be found in Annex B1. In the case of dams and reservoirs, roads, urban development, cultural heritage or coastal zone projects, more detailed guidance is set out in

[6] EA screening is explained in the *EA Sourcebook Update No. 2, Environmental Screening.*

Annexes B2–B6. Establishing whether the project incorporates any of these features or activities will indicate the broad areas of potential PCR impact, and thus the impact areas to be studied.

Examples of project activities that might impact PCR include:

- Civil works or construction activities may obliterate community PCR such as a public garden or cemetery.
- In a project having large work camps, PCR theft can be an issue, especially if the project is in an area or country well known for the trafficking of movable PCR.
- In the case of a linear project involving a long canal, highway or pipeline passing through a populated area, the project may cut off access to the community's places of worship, or sacred burial areas.
- Vibration due to the use of heavy equipment in an urban setting can damage historic or culturally important buildings in the vicinity.
- For a project involving inundation, the potential submerging of PCR such as registered and unregistered archaeological sites, is frequently an issue.

Note that the project's impact area is often different from, and much larger than, the actual construction area, or 'project area'. Just as, for example, pollution impacts may take place in areas far from the project area, so PCR impacts, particularly arising from phenomena such as theft, or changes in the water table or access, may occur in areas outside the project area.

Note also that it is not expected that *all* likely potential PCR impacts will be identified at this stage. The objective is to provide broad direction for the EA; the detailed impact assessment will be conducted within the EA itself.

3.1.2 Identifying the Likely Presence of PCR that could be affected

Having established that the project could potentially give rise to PCR issues, and having ascertained roughly the areas in which this is likely to occur, the EA team needs to gain some idea whether there is likely to be PCR in the potential PCR impact areas, and if so, what type of PCR. The following steps can assist this process

- Establish what type of PCR, if any, is most likely to be encountered in the potential PCR impact area. The *PCR Country Profile*, if available, will provide information on types of PCR likely to be encountered, internationally recognized sites, useful contacts, and sources of information. (See Annex D1 of this Guidebook.)The national, provincial or local cultural authority may be able to provide a cultural, historical, archaeological and paleontological overview of the potentially affected area.
- Consult international conventions and lists to ascertain whether there are any internationally recognized sites likely to be affected (See Annex D2 of this Guidebook, and Sections 4 and 6 of the *PCR Country Profile*);
- Provide information to the Bank team, on relevant national legislation on EA or EIA, guidelines, if any, for addressing PCR in EA, the management of PCR, and particularly any provisions for the management of chance finds.
- Provide information to the Bank team on any existing maps or survey reports containing information on PCR in the potential PCR impact area.
- In the case of a major project, such as a pipeline, highway or dam and reservoir project, or where it appears from the information available that there are reasons for anticipating widespread PCR impacts, a brief reconnaissance survey is

advisable. A local cultural anthropologist, historian or archaeologist should be able to assist with this. Sometimes, for budgetary reasons, it may be necessary to have the reconnaissance survey conducted and financed as a first stage of the EA, in which case it will be necessary to build in provisions for modifying the TOR as a result of the findings of the survey.

Having identified the likely presence of PCR in the potential PCR impact areas, discuss the findings with concerned and affected parties, and other team members involved in developing the TOR of the EA, to see if any key aspects have been overlooked.

By following the above suggested steps, it will be possible to indicate the *principal* areas of focus of the PCR component of the EA, the impact areas to be covered and the type of data to be collected.

It is important that the EA report contains an assessment of the capacity of the concerned authorities to implement the recommended mitigating measures. Capacity building may be required, including a rapid-response capacity for handling any chance finds during project implementation.

3.1.3 Identifying the Appropriate Skills

Based on the initial assessment of likely impacts on PCR and the data to be collected, the EA team needs to identify appropriate skills required to address PCR-related issues. In most cases when no significant PCR impacts are anticipated, an EA specialist experienced in addressing PCR issues (a PCR generalist) is adequate to handle the PCR component. However, when the project involves specialized and complex PCR issues, the EA specialist may proactively seek inputs and advice from subject specialists and respective local authorities. For example, in case of potential damage to nearby historic buildings, the EA Team may seek inputs from a *conservation architect* or *historic buildings specialist* and national or local cultural or antiquity authorities; similarly, to address any potential impacts or loss of community PCR such as public gardens or churches, mosques and temples, or cemeteries and burial grounds, the EA Team may seek advice and inputs from a *cultural anthropologist and or a local religious authority.* PCR experts (specialized in appropriate areas) will normally play a leading role in undertaking EA of cultural heritage projects.

Even if no major PCR impacts are identified in advance or during the conduct of the EA, *the report should nonetheless include a PCR section* and present evidence supporting such a finding.

Note that while there will be cases in which the TOR require the EA team to provide certain PCR specialists, it would be an unusual project which required more than one or two such specialists at a senior level, in support of the PCR generalist. In fact in many cases, one person is able to handle the entire PCR component. He or she will have to consult with experts, but may not necessarily bring them onto the EA team.

3.1.4 Writing the TOR

Guidance on writing the PCR aspects of TOR is provided in Annex C1 of this Guide Book.

In the case of a Category 'B' project, the TOR may be tailor-made to the specific requirements. For example, in the case of a project which is not expected to have any impacts on PCR, it may be sufficient to include procedures for chance finds (See Annex C3).

The TOR is expected to include potential major PCR issues, the likely impacts on PCR, the PCR impact areas, which will set boundaries for collecting the PCR baseline data, and any specialized PCR knowledge or skills required.

In some cases — especially large and complex projects located in poorly documented areas - it is not possible to identify in advance the PCR impact areas and the type of PCR data that should

be collected. In such cases, the TOR should require the EA team to establish these parameters at the beginning of the assignment, and propose Provisions for identifying and managing PCR during project implementation.

3.2 CULTURAL HERITAGE PROJECTS

It is often assumed that projects designed to be beneficial to PCR, usually termed 'cultural heritage' projects, do not require assessment in terms of possible adverse impacts on PCR. But in fact, significant adverse impacts on PCR have sometimes been caused by such projects, typically due to one or more of the following reasons

(i) The project has not been implemented as intended;
(ii) The need for basic precautions has been overlooked;
(iii) One type of PCR has been attended to at the expense of another;
(iv) Standards of workmanship have been inadequate;
(v) Inappropriate building materials have been used;
(vi) Accidents have occurred.

Even when EA is conducted on cultural heritage projects, there is a tendency to view the project only in terms of the PCR directly involved, and to forget the wider project context. This can result in, for example, underestimation of the potential negative impacts on other PCR, as well as overlooking potential social impacts. Thus the scope of the EA should include both direct and indirect impacts.

Guidance on assessing PCR impacts on cultural heritage projects is provided in Appendix B5.

3.3 FACILITATING THE EA

3.3.1 Liaison with Cultural Authorities

Some aspects of PCR fall within the mandate of institutions such as cultural authorities or ministries, district or municipal authorities, religious bodies or archaeological authorities. Specifically, government cultural or archaeological authorities are usually mandated to deal with monuments and archaeological sites (known and unknown). Furthermore, there is likely to be legislation concerning such sites.

Thus the EA process will be facilitated if such parties are made aware of the EA study, and if the EA team can be directed towards the appropriate body for consultation and participation during the baseline data collection, impact assessment and the development of mitigating measures.

3.3.2 Inclusion of Archaeologists in the EA Team

In cases where archaeologists are to be included on the EA team, they may expect that there will be funds made available to publish their findings separately and in detail. However, such publication is normally in excess of what is required under the EA, and unless an agreement to that effect is included in the EA consulting contract, this would not normally be possible. However, in some countries, publishing of findings is legally mandatory following archaeological exploration, and thus this issue should be discussed and agreed upon with the concerned authority before finalization of clauses concerning archaeological work, if any, in the EA consulting contract.

3.3.3 Liaison with Related Studies

Since PCR issues sometimes overlap with Social Impact Assessment (SIA), Resettlement and Indigenous Peoples issues, it is important that the EA team members addressing PCR be given the opportunity to liaise with these other study teams,

if any, or are provided with the respective reports if they have already been completed.

3.3.4 Exclusion of Sensitive Information

The publication of information regarding the nature and location of PCR in public documents has sometimes resulted in the theft of the artifacts concerned, or, in the case of religious or other sensitive sites, even physical attacks on those who provided the information. Thus where disclosure of any part of the findings of the PCR component of the EA would compromise or endanger the source of information or the safety or integrity of any of the physical cultural resources involved, the borrower, in consultation with the Bank, and relevant experts, may consider limiting disclosure to omit such sensitive information.

This aspect of the EA should be addressed during discussions with the Task Team, ideally based on early drafts of the EA, and certainly before the EA report is finalized.

3.4 Procedure when the EA Report has already been completed

Sometimes a stand-alone PCR impact assessment is necessary, typically because the Bank has become involved in a project after it has been designed and the EA has already been conducted — sometimes with inadequate attention to PCR. In such cases, it will be necessary to modify the EA TOR to limit the study to PCR alone.

The most common problem with stand-alone PCR surveys arises because they are conducted outside the context of the EA. The EA team has normally been disbanded, and if the EA Team Leader or EA team members are not available for discussion, this can lead to the erroneous assumption by the PCR survey team that impacts on PCR will be limited to those which are the most direct and obvious.

It will thus be important for the TOR to guide the PCR team in respect of likely impacts to be mitigated. This is best done by making sure that the PCR survey team is provided with a copy of the EA report, and that the team fully understands the proposed project and its likely impacts, both direct and indirect. This information should be built into the TOR, which should follow the general guidance provided in Annex C1, but with the EA Report mentioned as a point of reference for the scoping, baseline and impact assessment stages.

3.5 Procedure when Project Implementation has already begun

In cases where the Bank is financing part of a project, or a sub-project, after implementation has begun, it may be too late to conduct a PCR impact assessment on the lines set out in Annex C1. Instead, it may be necessary to conduct a survey and implement mitigating measures in parallel, as the project moves ahead. This applies especially to linear projects (such as a pipeline or highway), or those that involve inundation, such as dams and reservoir or irrigation projects.

Guidance for developing the TOR for such 'survey and salvage' studies is provided in Annex C2 in the form of specimen TOR for archaeological salvage during implementation of a hydroelectric project. Such studies could also cover other types of PCR, such as burial grounds.

The most critical issue determining the scope of work for such a study is typically the time constraint, due to ongoing and impending implementation works. Every effort must be made to avoid project delays and contractor penalty payments. Thus the program of work must be derived by working backwards from the deadline for completion. This date will also generally mark the time by which the team must be off-site.

It will be necessary to liaise with the survey team and the contractors before the work commences,

in order to agree upon a work plan which will not interfere with project implementation. If the concerned parties discuss the possibilities at an early stage, it may be possible for the contractors to temporarily re-align access roads, choose alternative waste dumps, or make other accomodations to facilitate the work, at no additional cost.

Note that in the case of projects involving large-scale earthworks or flooding, local residents may have been resettled elsewhere, or the community may have been disrupted in other ways, making it impossible for the team to collect information and involve the community in its work as called for by OP 4.11 and OP 4.01.

3.6 PROCEDURE FOR PROJECTS WITH UNDEFINED SUB-PROJECTS

Sometimes a project consists of several sub-projects, some or all of which are undefined at the time of project design, and may remain undefined until after approval of the loan. Such projects include those in which the Bank provides funds to participating national banks, credit institutions and other financial intermediaries for on-lending to final borrowers, in which case the project is categorized as a financial intermediary (FI) project.

In the case of such projects, each sub-project must eventually be screened in accordance with OP/BP 4.01, *Environmental Assessment*. As discussed in the previous chapter, it is appropriate for the borrower to prepare an Environmental and Social Management Framework (ESMF) which sets out the procedures to be followed. The ESMF generally describes the nature of the proposed sub-projects, the broad environmental characteristics of the areas in which they are likely to be located, and sets out procedures for sub-project selection, screening, impact assessment and the development of mitigating measures, and the monitoring and reporting of their implementation. The ESMF also indicates the relevant environmental and social safeguard policies,and sets forth procedures and requirements to be followed to ensure the environmental and social integrity of the project

Before approving a subproject, the FI, the relevant sectoral agency, or the project implementation unit, should verify that the sub-project meets the environmental requirements of appropriate national and local authorities and is consistent with the applicable environmental and social safeguard policies of the Bank.

In particular,

- It is important that the ESMF covers the issue of PCR adequately. Since the location of the sub-projects may not be known at the time of the development of the ESMF, it is also important that guidance for determining the suitability of the location from the perspective of PCR is included in the screening procedures. Thereafter, PCR should be considered at each stage, as in the regular EA.
- The issue of institutional capacity is particularly relevant to the question of addressing PCR, as the functioning of procedures such as chance finds will depend on the capacity of the local cultural authorities.

3.7 REVIEWING THE EA

3.7.1 Introduction

Chapter 5 of this Guidebook sets out guidance notes for reviewing EA reports in respect of the PCR component. These guidance notes apply in all cases, ranging from a full, stand-alone Category 'A' EA to a Category 'B' EA focused on PCR. The term 'EA report' in this context includes the Environmental Management Plan (EMP), if any.

3.7.2 Responsibility for Review

Note that in-country review of EA with potential impacts to PCR should involve the national cultural authorities.

3.7.3 Mitigating Measures

While reviewing the recommended measures to mitigate potential impacts on PCR (the PCR section of the EMP, or the PCR Management Plan), it is recommended that the EA review team normally:

- Verify that the concerned parties have agreed with the proposed measures, that they are practical in the local context, and that the cost estimates for their implementation are sufficiently accurate;
- Ensure that the EA report includes an assessment of the capacity to implement the measures, together with any recommended capacity building actions;
- Check with the concerned cultural authorities that the proposed measures are acceptable within the national regulatory and legal framework, including laws and regulations concerning cultural heritage and antiquities.

3.7.4 Chance Finds Procedures

Wherever PCR are likely to be unexpectedly encountered by contractors, chance finds procedures should be included among the recommended mitigating measures. In such cases, it will be useful to ascertain whether chance finds clauses exist in national legislation or regulations, or whether provisions similar to the framework provided in Annex C3 of this Guidebook will be acceptable to the concerned authorities.

Whether the chance finds procedures are based on the borrower's legislation and regulations, or on the Bank's guidance, it will be necessary to review and agree both the procedures and the final wording of the concerned clauses with the Task Team Leader, and with the relevant cultural authorities in the borrowing country.

3.8 PREPARATION OF A PROJECT OPERATIONAL MANUAL

When preparing a Project Operational Manual, it is recommended that the borrower:

- Check that the cultural authorities have agreed to the activities and schedule required to implement the proposed PCR mitigating measures, especially if they involve the granting of archaeological permits, which may take time, or involve dealing with religious authorities;
- Check that the scheduling of the PCR mitigation works takes into account the weather pattern;
- Check that any proposed strengthening measures for institutions managing concerned PCR take into account the absorptive capacity of the institutions concerned;
- Ensure that the resources and arrangements for the proposed chance finds procedures are built into the implementation schedule, including a chance finds monitoring system for the project implementation period.

CHAPTER 4

GUIDANCE FOR THE EA TEAM

Carrying out the EA is the borrower's responsibility; for which the borrower typically selects consultants or an institution, as discussed in Chapter 3. This is done with the support of the World Bank Task Team, as discussed in Chapter 2.

The guidance provided here is addressed primarily to the EA Team. It assumes a basic knowledge of EA. Thus it does not explain how an EA is conducted, but it points out the aspects to which attention should be paid for the execution of the PCR component.

4.1 PLANNING THE EA AND MOBILIZING THE EA TEAM

4.1.1 Scope of Work

Section 3.1 of this Guidebook provides guidance on determining the scope of work of the EA. Appendix B1 contains project activities and features which often impact PCR, and Appendix B2-B6 provides more detailed guidance for projects involving dams and reservoirs, roads, urban development, cultural heritage, and coastal zone projects.

Note that the boundaries of the impact areas will differ according to the impacts concerned. For example, noise during construction may affect people using sites within a radius of 300 metres around the project; air emissions during project operations might create an impact area up to 500 metres distance in a specific direction from the project site, depending on the prevailing winds; the impact area of a permanently raised water table might be several kilometers across; the area of visual impact of a transmission line might be a narrow segment defined by the view of the landscape by tourists at a designated vantage viewpoint.

Having identified where the survey work should be concentrated, it will be necessary to determine what data should be collected, and when. These then become the parameters of the baseline survey addressing PCR.

4.1.2 The PCR Team Member

The key requirements of the EA team member responsible for PCR are that he or she should have some familiarity with all aspects of PCR and have experience and knowledge of EIA and the project cycle.

The PCR team member may not necessarily be dealing exclusively with PCR. He or she, like any other member of the EA team, may be covering other topics as well. *If no significant PCR impacts are expected,* then a PCR generalist on the EIA team should be able to handle the PCR component.

In many borrower countries, there are few people who have qualifications and experience in PCR outside of a narrow specialization, and even fewer who have any knowledge or experience of EA. Until the situation improves in this regard, it is recommended that EA teams in such countries nominate an experienced EA practitioner to take overall responsibility for the PCR component, and to familiarize himself or herself with the subject and the requirements of the World Bank's PCR safeguard policy. This team member should have a good overview of both the social and biophysical aspects of EA, and should understand the PCR aspects sufficiently well to be able to

advise the Team Leader on the need for specialists.

4.1.3 Recruiting PCR Specialists

If significant PCR impacts are anticipated, the PCR team member should determine whether or not any PCR specialists are required, based on the brief initial assessment of the likely major impacts on PCR, and the PCR-related data to be collected. Typical examples of such a specialist could include, for example, a cultural heritage management specialist, archaeologist, anthropologist, paleontologist, historian, conservation architect, or art historian.

It is important that the specialist has good knowledge and experience. In the case of team members conducting socio-cultural survey work, it is particularly important that they have experience in the area concerned, and command of the local language.

In determining PCR team requirements, note that it would be an unusual project which would require more than one or two specialists for PCR-related work. A PCR generalist will normally be able to handle many of the expected PCR impacts.

4.1.4 Sourcing and Working with PCR Specialists

In many borrower countries, specialists such as cultural anthropologists, art historians or archaeologists are often academics, with little or no experience of EA. It is therefore strongly advised that the team member with overall responsibility for PCR should work closely with the specialist, for two reasons:

- If left alone, the specialist may not be aware of the requirements of EA. Most specialists are used to writing for a specialized readership, to whom research and technical content are more important than management information;
- The PCR specialist may not be used to working with the other disciplines found on the EA team, such as biologists, hydrologists and economists, and may prefer to work alone. However, there is a danger that isolated from team discussions of the biophysical, social and cross-sectoral impacts of the project, he or she may limit the PCR study to an assessment of the most obvious and direct PCR impacts, resulting in an inadequate PCR impact assessment.

It is recommended that the EA Team Leader organize an initial session for all team members, including those responsible for PCR, mainly to:

- Learn about the project, how it will be constructed, commissioned and operated, and, if appropriate, decommissioned;
- Present maps, charts and other materials showing the various project activities at each stage, and illustrations of the physical appearance of the project when completed;
- Discuss the likely impacts at each stage. If possible, include in this session even the short-term specialists who may not begin their work until later;
- Take into account the weather pattern in drawing up the fieldwork schedule, particularly where the baseline data collection includes archaeological investigations.

4.1.5 Planning Public Consultations

One of the most critical aspects to plan well in advance is that of public consultation. Meetings need to be agreed with the local community and the local authorities, and should be combined, if possible, with the social research work planned by other EA team members.

4.1.6 Obtaining Permits

Archaeological surveys consisting of surface walk-overs can usually be conducted within the ambit of the EA, and do not normally require a separate permit. However, if test-pitting or

archaeological excavations are anticipated for baseline data collection purposes, these will usually require a permit, so the necessary application should be made as early as possible.

Also, the EA team may need a permit to visit PCR sites which are under protection orders, lay within protected areas, or are subject to other legal injunctions.

4.2 DETERMINING THE POLICY, LEGAL AND REGULATORY FRAMEWORK

Before beginning the baseline data collection, obtain copies of the following documents, and identify the implications for the conduct of the PCR component of the EA:

- The World Bank's EA policy OP 4.01 and the PCR policy OP 4.11;
- Sections of national EIA laws, regulations and guidelines relating to PCR;
- Sections of the national environmental conservation strategy, if any, relating to PCR;
- National laws and regulations relating to:
  - Antiquities, including sale and export;
  - Published procedures for addressing chance finds, in terms of ownership and requirements by the contractor and cultural authorities;
  - Archaeology, including the issue of permits.
- PCR-related conventions and treaties to which the borrower country is signatory;
- Sites in the borrower country listed as World Heritage Sites according to the UNESCO World Heritage convention, or included on UNESCO's 'tentative' list under the same convention.;
- Sites in the borrower country currently listed by other international organizations in the field of PCR such as the World Monuments Fund, or ICOMOS, as being of national or international importance;
- Any national or provincial registers of PCR maintained by accredited authorities in the borrower country.

The *PCR Country Profile*, if available, will be helpful, as it provides names and contact data for PCR institutions, as well as references to laws and regulations.

4.3 CONDUCTING THE BASELINE

4.3.1 Review the Baseline Boundaries

Review the scope of work in terms of the identified PCR impact areas, and the data to be collected. Ensure that the PCR survey team members are aware of the agreed baseline boundaries.

4.3.2 Sources of Information

Remember that PCR often need to be actively sought out; they may not be obvious to the casual observer. Detailed data may be available from sources such as:

- National/provincial level:
  - Cultural authorities;
  - National or provincial PCR registers;
  - Universities and colleges;
  - Public and private PCR-related institutions;
  - Religious bodies;
  - Local PCR NGOs and NGOs active in socio-cultural affairs.
- Community and individual level:
  - Community leaders and individuals;
  - Schools
  - Religious leaders;
  - Private scholars:
  - PCR specialists,
  - Historians;
  - Archaeologists;
  - Cultural anthropologists;

The *PCR Country Profile* contains data on institutions and individuals who may be able to provide necessary information.

4.3.3 The Need for Coordination

Note that there should be good coordination between the EA team member(s) working on PCR and those working on social issues, particularly studies related to involuntary resettlement, Indigenous Peoples, and social analysis or social assessment.

4.3.4 Methods of Data Collection

Methods of PCR data collection vary, according to the type of PCR concerned. They include, for example:

- Existing PCR inventories (The *PCR Country Profile* provides data on PCR inventories in the country concerned);
- Interviews and ethnographic studies with concerned and affected communities;
- Interviews of local religious leaders;
- Interviews of specialists with local knowledge;
- Surveys of archaeological or paleontological PCR;
- Building surveys, especially in urban areas;
- Gathering of oral traditions;
- Use of aerial photographs, Geographic Information Systems (GIS), and Global Positioning Systems (GPS);
- Specialized techniques for submerged sites, such as marine magnetometers.

Detailed coverage of these methods is outside the scope of this Guidebook; more information can be found in the Bibliography.

Fig. 8: Here local villagers show members of an EA baseline team an ancient monument in a forest.

4.3.5 Writing up the Baseline

When documenting the PCR section of the baseline,

- Ensure that the vocabulary is appropriate for project management and public readership. For example, do not use specialist language when describing historic periods, and do not use Latin or other technical terms in the main report. Such material, if it is necessary, should be annexed.
- Use maps, charts and photographs as much as possible.

4.3.6 Assessing PCR Significance

Document in plain language the significance ascribed to the PCR by various parties. Be specific as to who these parties are. Are they local people? Do they constitute an identifiable ethnic group? Are they scholars?

Secondly, at what level is this value ascribed — for example, at the local, municipal, provincial or national level, or among the international community?

Assessment of the significance of the PCR concerned involves documenting and contextualizing the importance ascribed to the

PCR. Factors to be considered include, for example,

- The nature of the cultural significance, ie., whether it is religious, ethnological, historic, social, archaeological, architectural, scientific, aesthetic, or other;
- Whether or not the PCR has been previously registered or documented;
- Religious ceremonies, social and historical events, ethnic groups or important individuals associated with the PCR;
- The strength of such associations;
- The integrity of the PCR;
- Distinctive or rare attributes of the PCR;
- Its actual or potential contribution to scholarly research;
- Its irreplaceability;
- The physical and social context.

It is not good practice to simply annex esoteric commentary on a PCR — for example, a technical description of a site by an archaeologist — and leave it at that. EA reports are produced to support decision-making. They are intended for readership by managers, and are made available to the public. Thus any annexes written in technical language should be accompanied by interpretive text explaining the significance of the PCR concerned in lay-person's language, its rarity, and relative importance to other PCR in the local and national context.

Note that living cultures are dynamic. State if this aspect is relevant to the question of the cultural value attributed to the PCR.
In many cases it is difficult and contentious to attempt to put a monetary figure on the value of a PCR (see Section 1.7, *Who Decides on the Value of PCR?* above), for the following reasons:

- The value is often subjective, in that it may depend on who is ascribing value to the PCR concerned;
- The value may be context-dependent, especially if the PCR are archaeological, or part of a living culture;
- The value will often depend upon the mitigation options open to the community concerned. For example, a church building which is the only place of worship in a village, and which may at first be considered untouchable, may become of less 'value' if the church could be re-established at a more convenient site, or access to an existing, spiritually more important site were to be opened up as an alternative.

However, there are occasionally exceptions to this rule, as discussed in Sections 4.6 and 4.7 below.

4.4 CONDUCTING THE IMPACT ASSESSMENT

It is recommended that the EA team assess possible PCR impacts for each project stage, for example, construction, commissioning and project operations (if applicable).

If the EA team is not familiar with the various types of impact that projects may have on PCR, Annexes B1 to B6 provide common examples of PCR impacts by project type.

The EA team should ensure that the impact assessment covers any PCR issues anticipated in the scoping phase or in the TOR.

The potential impacts on PCR should be described in terms of:

- their likelihood;
- their duration;
- the extent of the potential damage:
- the level of irreversibility of the impacts.

Cross-sectoral impacts and other indirect impacts such as induced development should be considered. To identify these, discussion of the biophysical and social impacts with the other team members is often useful, to determine if they might lead to impacts on PCR.

The EA team is advised to consider the unexpected, such as the possibility of impacts on PCR from accidents during construction, commissioning or operations, especially in urban settings. Such considerations may lead to important recommendations for preventative measures.

It should be remembered that impacts on PCR may not necessarily affect a building or other structure that is the core feature of the PCR site. The project may encroach on some other part of the site, or may alter its surroundings. Such impacts are often no less real than direct physical damage. For example, the construction of a supermarket complex or bus station next to a sensitive spiritual site could constitute a major negative impact on the site.

In fact, impacts on PCR may be entirely indirect, and may arise from social and cultural reactions to the project. For example, if access to a temple becomes difficult as a result of a project, the community may prefer to attend ceremonies in another temple, as a result of which the original temple may deteriorate through lack of use and neglect. Thus the identification of impacts often requires an understanding of the socio-cultural issues.

What if there are no PCR likely to be affected?

If it is established during the baseline data collection that there are no PCR that could possibly be affected by the project, then that finding should be set out in the baseline section of the EA report. However, having now completed the impact assessment section of the EA, it is advisable to review the earlier findings, to verify that all potential impact areas have been covered in terms of PCR. *Note that virtually all communities have PCR of one sort or another.*

If it is still clear that there are definitely no PCR issues, then no further PCR work will be necessary in the EA, other than to report the absence of PCR in the impact assessment section of the EA report, and to institute chance finds procedures if appropriate.

Note, however, that even in such a case, the EA report should still include a PCR section, and statements such as "No significant impacts on PCR are expected" should be accompanied by evidence supporting this conclusion, and showing that advice has been taken regarding all possible aspects of PCR impacts.

4.5 ANALYSIS OF ALTERNATIVES

The TOR for the EA may require a discussion of alternatives to the project as presented. So far as PCR issues are concerned, it is recommended that the EA report should:

(i) Establish whether the potential impacts on PCR are likely to be sufficiently important to suggest an alternative project design, location or technology. If so, then the alternative should be briefly assessed in terms of the likely impacts on PCR, demonstrating why the alternative location or technology has a significant advantage;
(ii) Include a brief assessment of PCR impacts for each alternative, in the event that alternative project locations or technologies are suggested by the EA team for reasons unconnected with PCR;
(iii) Ensure that the final comparative analysis between alternatives takes into account PCR issues.

In cases where the EA report is required to predict impacts *compared to the absence of the project*, it should be made clear to the reader whether the predicted impacts on PCR would occur anyway, with or without the project.

4.6 DEVELOPING MITIGATING MEASURES

4.6.1 Basic Principles

Mitigating measures for potential impacts on PCR are developed by the PCR member of the EA team together with any PCR specialists such as archaeologists, cultural anthropologists or

others, as appropriate, and in close collaboration with the concerned stakeholders.

As in the case of impacts on the biophysical environment, mitigating measures to address impacts on PCR cover a wide spectrum, including avoidance of any loss or damage whatsoever, and a range of damage mitigation and compensatory measures. The preference is usually avoidance if it is not too late to adjust the project design. If complete avoidance is not possible, then some agreement can usually be reached on a compromise measure.

Consideration may be given to integrating into the project the utilization and management of PCR as socio-economic assets.

Close liaison should be maintained with the EA team members working on social issues, particularly those related to Indigenous Peoples and involuntary resettlement, and any teams engaged on related studies such as Social Assessment or Social Analysis, as the suitability and acceptability of PCR mitigating measures often have strong social aspects.

Note that in the case of impacts on PCR, there is a wide range of typical mitigating measures, due to:

- The wide range of types of PCR;
- The different cultural values that the various stakeholders ascribe to the PCR concerned;
- The unpredictability of stakeholders' reactions to possible mitigating measures.

Thus there can be no formulae or checklist as to what mitigating measures are appropriate and acceptable for any given set of potential impacts. *Measures have to be developed separately for each individual case.*

It is clear from the above that consultations with concerned and affected parties are critical in the design of mitigating measures to address potential impacts on PCR. There is no point in recommending mitigating measures if the people who attribute the cultural significance to the PCR are not in accord with the proposals.

It is also important that the mitigating measures be socially and economically sustainable, which again reinforces the need to ensure that the community and the concerned stakeholders agree that the proposals are viable.

It is important that the consultations on mitigating measures go beyond simply informing stakeholders or holding discussions with them. The concerned and affected parties should be involved in suggesting mitigating measures. They may come up with suggestions that the EA team would not have thought of. Secondly, if their ideas are adopted, they are much more likely to accept them than if the measures appear to be imposed from above.

4.6.2 Examples of Potential Impacts and their Mitigating Measures

In response to the specifics of individual cases, PCR specialists working on EA teams in collaboration with stakeholders have produced, and continue to produce, a wide variety of solutions to the potential impacts of projects on PCR. It is thus not possible to recommend standard measures to be taken in a given situation. However, EA team members unfamiliar with this subject may benefit from the following brief presentation of some examples of PCR mitigating measures that have been developed and implemented in various situations.

The examples are divided by category of PCR involved, and do not cover every single type of PCR, nor every type of impact.

Living-Culture PCR

Regardless of the history of the areas where people are living, virtually all communities have PCR related to their current, living culture. These would include, for example, places of worship, sites used for important social functions, burial grounds in current use, and natural PCR such as

sacred trees. As a group, these are ubiquitous, and represent the type of PCR most commonly encountered by project developers, particularly in developing countries and especially in rural areas.

It should be noted that it is unusual for a living-culture site to be registered with a ministry of culture or indeed any cultural authority, unless it also happens to be a historic site.

It is clearly important to discuss the potential impacts on such PCR with EA team members dealing with the potential social and socioeconomic impacts of the project, because these issues may have a bearing on the sort of mitigating measures that are acceptable. For example, in the case of a project in Lao PDR, some communities due to be resettled chose to have temples and spirit houses carried to the resettlement site, whereas others chose to build new ones.

Individual graves are commonly encountered on sites earmarked for development, and the solution lies in reaching agreement with the living relatives of the deceased.

Fig. 9: Threatened by the widening of a highway, this important grave, or *mazaar*, in India (above) was removed and relocated by agreement with the family concerned to a new site.

Again, there are no hard and fast rules. In Lao PDR, some communities considered that their burial grounds should be allowed to be inundated subject to appropriate ceremonies being performed, whereas others insisted on exhuming the remains of their relatives for re-interment in a new site.

Paradoxically, issues arising from potential desecration of burial sites are some of the easiest and least expensive to address if handled early on, yet some of the most difficult to deal with if left until too late.

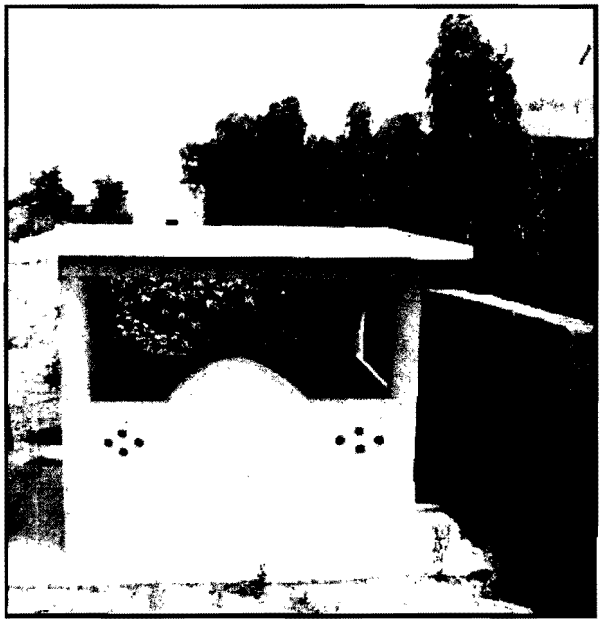


Fig. 10: This tomb was newly built for a grave removed from a project site in India (above).

In the case of natural living-culture PCR, a similarly wide range of measures might be considered. In exceptional cases, for example, if the PCR is a sacred tree of great cultural importance, it might be necessary to re-align a road or channel to avoid it. But often a compromise is possible, if the stakeholders are given the opportunity to propose a solution. For example, it might be acceptable that seeds or cutting be planted at a new, suitably landscaped site with facilities for visitors.

In some cases, where the principal cultural value of the site involves a spiritual association, early

consultations conducted sensitively with the concerned parties may conclude that the problem can be solved by simply conducting a ceremony of consecration.

Fig. 11: This waterfall at Bujagali, Uganda, was a sacred site, being the home of a community spirit. Following proposals for a dam that would partly submerge the falls, project proponents consulted with local religious leaders to agree on a new site for the spirit, and appropriate ceremonies were conducted and compensation agreed upon.

Historic PCR

Historic sites and structures are another type of PCR frequently potentially impacted by projects, particularly in urban areas. These include, for example, monuments, buildings, historic roads, bridges, and walls. The more important of these are usually registered with the national cultural authorities, but some. may be registered with local authorities; and others may not be registered at all. The sort of activities giving rise to such impacts typically include land-clearing, land-fill, deforestation, excavation, soil compaction, vibration, waste disposal, and theft or damage arising from poor labour force management.

Mitigating measures often include safety and security precautions; project design modifications (such as realignment of a road), careful choice of activity location (such as quarrying), good on-site housekeeping, and careful choice and use of equipment.

If the impact is to be of only limited duration, such as during construction, the mitigating measures may include, for example, banning the use of heavy machinery, controlling the use of explosives to avoid landslides in an area where there are caves containing PCR, or ensuring that measures are taken to prevent members of a the labour force gaining access to the PCR site.

Since potential impacts on a site are not necessarily confined to the monument or building itself, it is often necessary to take precautions regarding impacts to the zone around the site, and below ground.

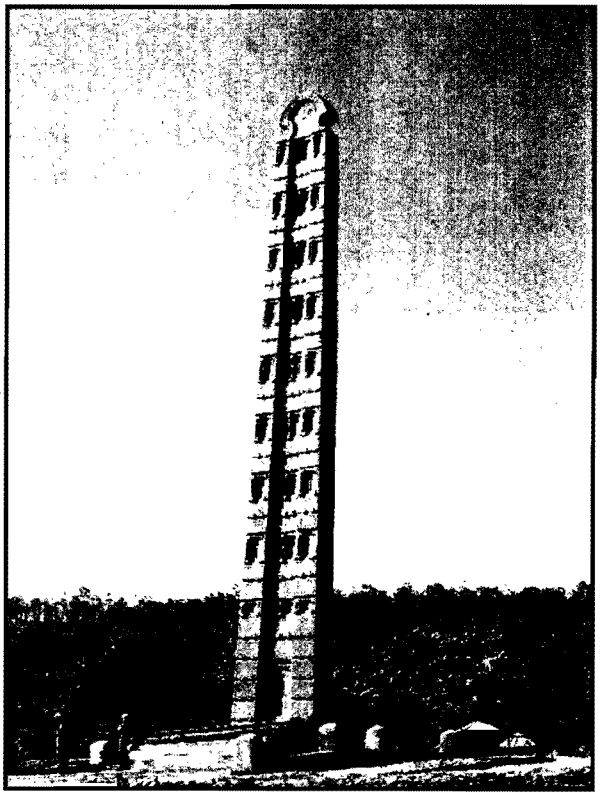


Fig. 12: In order to avoid potential damage to underground chambers, special precautions in the use of heavy equipment are being taken during civil works (the erection of an ancient obelisk) on this World Heritage site in Ethiopia.

Post-construction impacts on historic PCR typically arise from activities such as inundation, exposure to traffic, dust, air pollution, and in the longer-term, problems such as changes in water-table, soil pollution and prolonged erosion of the land, especially river banks and coastlines. Whereas construction-phase impacts, if overlooked, can sometimes be addressed when they come to light, impacts that emerge during project operations can be much more difficult, if not impossible, to resolve. The solution thus

usually lies in early detection and mitigation by adjusting the project design at preliminary design stage.

Wherever feasible, the ideal solution is to avoid the negative impacts altogether, and, if possible, to enhance the PCR or its access.

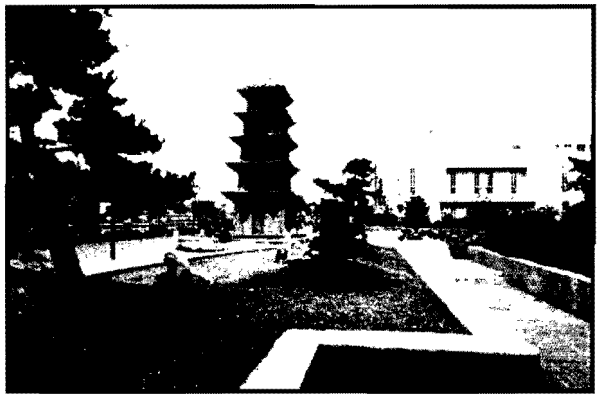


Fig. 13: In Ningbo, China, the alignment of a new street was adjusted to avoid this Tang dynasty brick pagoda, which was then landscaped to buffer it from the street.

Sometimes, however, avoidance of the PCR altogether is not feasible for engineering or other reasons. In such cases, removal of the PCR to another site may be possible.

In the case of a place of worship, it is especially important that the community and the concerned authorities be contacted at an early stage, to avoid misunderstandings and potential hostility towards the project. When approached in this manner, without undue time pressure, the stakeholders may be willing — or even enthusiastic — to have the building demolished if it can be replaced by a new one on a site of the community's choice. If the building is of architectural importance, the solution may be to have the existing building dismantled and reconstructed on the new site.

Fig. 14: This pavilion in Ningbo, China, was moved out of the path of a new road to a nearby lakeside site. It was then restored and converted to a tea-house.

In cases where the project will physically encroach on a PCR site but not damage the principal structure, such as a building close to a highway, the community might consider that the negative impact of encroachment would be offset by renovation works, landscaping or improved access.

Fig. 15: This historic temple in Upper Pradesh, India, was renovated by a road-widening project that encroached on the site, as part of a successful programme of community collaboration on PCR mitigating measures.

Archaeological PCR

Where projects involve activities such as excavation, civil works, inundation, quarrying or land-fill, there may be disturbances to archaeological or paleontological sites. These may be divided into sites already identified, and those that come to light during the EA or during project implementation.

Recommendations for registered sites are developed by the archaeologist on the EA in conjunction with the concerned archaeological authority and any other stakeholders. Such measures may involve, for example, avoiding the site altogether, or excavation, documentation and salvage. In exceptional cases, it may be necessary to re-bury a site for future excavation. Such a proposal would, of course, have to be approved by the authorities concerned.

Again, there is no blueprint. In the Lao PDR, excavation of a site potentially impacted by flooding was recommended by the government archaeological department but was opposed by the local community, who, regarding the site as sacred, preferred that it be flooded untouched.

In some cases, the EA baseline survey reveals the potential presence of important PCR, in which case arrangements may have to be made for excavation or partial excavation before the project proceeds.

Fig. 16: This important stone-age skeleton was discovered in a proposed limestone quarry during a baseline survey in the Lao Republic. The community cooperated with archaeologists to enable it to be removed and taken to the national museum.

In other cases, archaeological PCR come to light during the course of project construction. Such discoveries fall into two types: (i) those that are found by a survey team charged with the task of moving ahead of project activities, and (ii) those that are encountered by chance during project work.

Type (i) PCR discoveries are often associated with projects in which the construction phase takes a long time and traverses large areas of hitherto undisturbed ground, such as the laying of a pipeline, or a new highway, where it is not practical to conduct a ground survey of the entire area during the EA.

Fig. 17: Archaeological survey, excavation and salvage were carried out along a 557 km transect during the laying of the Bolivia-Brazil natural gas pipeline. This photograph shows a team working on the route.

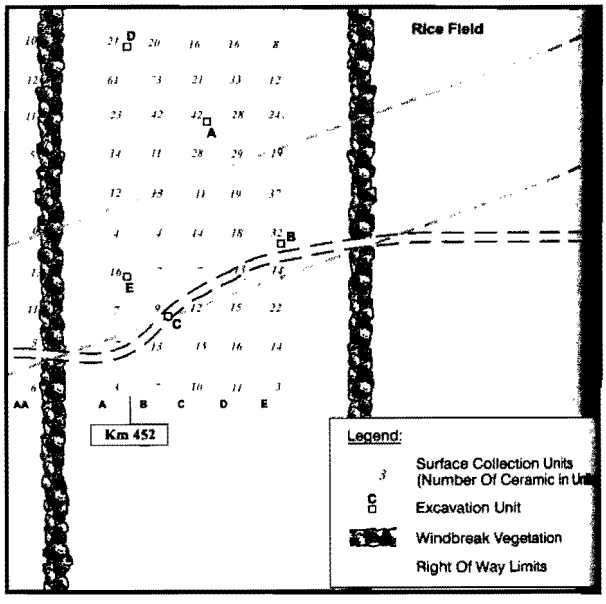


Fig. 18: Bolivia-Brazil natural gas pipeline: map locating surface collection and excavation

Fig. 19: Bolivia-Brazil natural gas pipeline: one of the many artifacts discovered on display at the national museum

In such cases the mitigating measures usually call for combining survey work with salvage and documentation as the right-of-way is cleared.

Type (ii) discoveries are popularly known as chance finds. They occur in situations where there is no ongoing archaeological survey, and are managed by a procedure designed to address such encounters in the most efficient and economic manner.

Most countries have legislation or regulations regarding chance finds. Annex C3 contains guidance on the development of chance finds procedures. Such procedures vary according to factors such as the capacity of the local archaeological authority to provide the required services. For example, in some cases they can supply an on-site archaeologist; in other cases they will rely on a rapid-response team. In some large projects, where it is not practical for archaeologists to be based on site, contractor staff are trained in archaeological artifact and site recognition.

Note that chance finds procedures are not necessarily confined to archaeological PCR. They may also cover, for example, community PCR such as graves and historic objects and sites, and thus may involve the deployment of other specialists, such as sociologists or historians.

Movable PCR

Movable PCR, such as paintings and manuscripts, are particularly vulnerable to potential loss or damage from projects, because they are easily overlooked, and their loss may escape detection. Typically, such impacts arise from vandalism, souvenir hunting, theft, air and water pollution.

Damage and loss from theft can be a serious problem during the construction phase, and mitigating measures often include the institution of suitable management and security arrangements at the labor camps. Laborers are often well aware of the value of movable PCR; they are sometimes recruited by antique dealers to obtain artifacts to order.

In the case of items of spiritual importance, the local religious authorities may be approached so that suitable security measures can be made well before project construction begins.

Artifacts of purely local interest might be moved to a community museum as a source of local income-generation, or to a national museum in

the case of PCR of scholarly or national importance.

Fig. 20: These statues of the Buddha in the Lao PDR, left unguarded at a sacred place in the forest for several years and identified during baseline data collection, were moved to the safety of a temple before project commencement to protect them from theft.

Where artifacts are discovered in an archaeological site during project construction, provisions for chance finds established in the project EMP should be followed, including immediate notification of relevant authorities.

Note that threats to movable PCR can go unnoticed, unlike threats to PCR sites such as buildings, which are well known to be vulnerable to damage from vibration and air or water pollution. PCR such as manuscripts are very vulnerable to moisture and cement dust — and especially to a combination of both, so libraries or museums within the impact area may require special precautions.

Movable PCR are not all in public collections. Some are in private hands. Thus the discussions between the EA team and the community on PCR impact mitigating measures normally includes discussion of potential impacts to moveable PCR so that any special precautions required for private collections can be addressed.

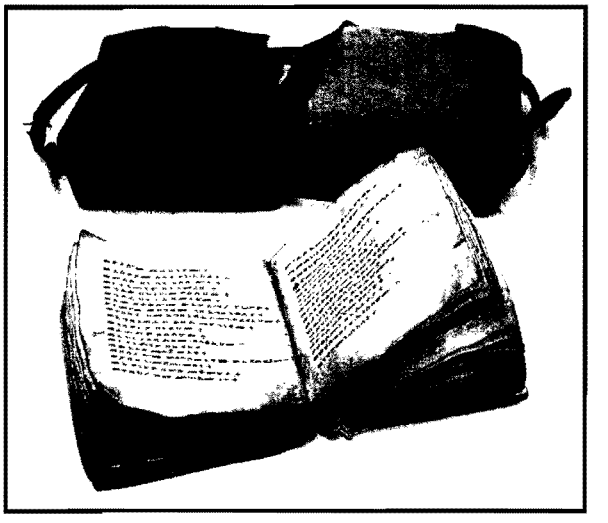


Fig. 21: Ancient manuscripts in local libraries are vulnerable to damage from air pollution.

During project operations, theft sometimes again becomes a major issue, because where PCR sites are exposed to increased human traffic, pieces may be broken off or otherwise removed form the site to create marketable artifacts, eventually resulting in a sustained and deeply entrenched illegal trade. In countries such as Cambodia this problem has become widespread.

Finally, it should be noted that a collection of artifacts may be community-based, i.e., the items, perhaps related to the cultural history of the village, may be located in several different households. Where a community is going to be resettled, the collection may become broken up, items may be lost or overlooked in transit, and the collection may eventually disappear. In such cases, the establishment of a small community museum might be considered to be a worthwhile component of the resettlement plan.

Underwater PCR

PCR are frequently associated with coastal zones, which are often rich in PCR. But apart from historic artifacts associated with coastal settlement, and especially ports, they also include shipwrecks and related artifacts, natural features such as coral reefs of cultural importance, and sites that were previously on the land but are now submerged due to changes in the coastline.

One obvious and common direct threat to underwater PCR is the dredging of ports, many of which are located in natural harbors that have been used since time immemorial. Large PCR may be damaged or destroyed, and artifacts may be removed.

There are two important aspects of dealing with underwater PCR and which are relevant to the design of mitigating measures:

(i) It is often very difficult to know what PCR might be present, even after disturbance, because both the dredging and dumping of the dredged material is often conducted out of sight;
(ii) Once removed from the sea, some PCR immediately begin to deteriorate.

It is thus important to raise the issue of underwater PCR with the cultural heritage authorities as early as possible. Not only will this give more time for an examination of what might be on the sea bed or river bed (which could be combined with data collection on sediment quality), but it may also influence the selection of dredging method.

There are basically two methods of dredging: mechanical and hydraulic. In mechanical dredging, a crane or similar piece of equipment mounted on a pontoon scoops up the dredged material in a grab and lifts it onto the land or onto a barge which takes it to the shore, where the material is loaded onto trucks and taken to a landfill site.

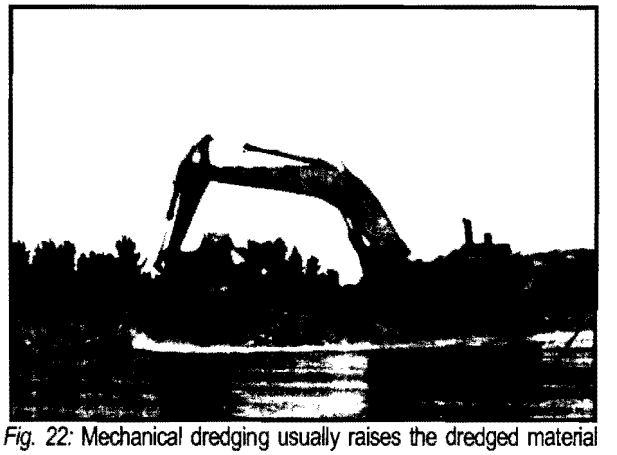


Fig. 22: Mechanical dredging usually raises the dredged material to where it can be seen.

In hydraulic dredging, a specially designed ship sucks the material off the seabed through a pipe into the hold of the ship, and then moves either to shore where the material is pumped in a pipeline to the deposit site, or to another part of the sea where the material is re-deposited.

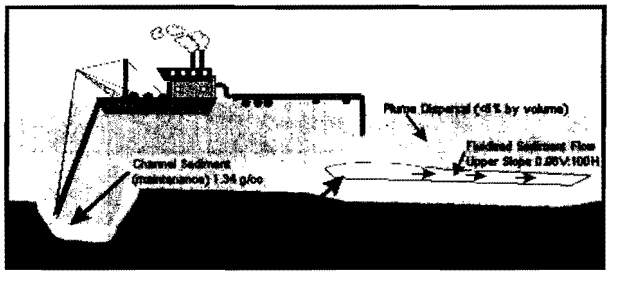


Fig. 23: Hydraulically dredged material may be invisible from beginning to end.

It is thus clear that:

- The choice of dredging method influences the possibility of implementing chance finds procedures for underwater PCR, and that early attention to this issue is important;
- In the case of dredged material being used for landfill, it is necessary to check on the likelihood of PCR on the landfill site;
- In the case of material being dumped elsewhere in the port, the local cultural authorities should be contacted to find out if there is a possibility of inadvertent burial of PCR.

Dredging is not the only potential threat to underwater PCR. For example, off-shore oil and gas developments, sea-bed cable and pipe-laying and trawling can disturb submerged sites, and tourists diving or snorkelling may cause damage or remove artifacts. Design of mitigating measures in such cases should involve consultation with the local authorities.

In the longer term, there may also be a risk of burial of underwater PCR by sediment deposition, or, for example, disturbance caused by increased turbulence and accelerated currents arising from changes in the coastline or removal of natural barrier reefs. Indirect or long-term though these potential impacts may be, the EA is expected to report on them, and propose mitigating measures acceptable to the concerned stakeholders. These may call for adjustments to project design, but may also include operational guidelines typically ranging from provision for regulating flows from an upstream dam where accelerated currents would threaten a barrier reef, to adjustments to shipping lanes for ships of deep berth to avoid known underwater PCR such as a shipwreck.

The need to incorporate PCR into project design as far as possible applies as much to coastal zone projects as much as to other projects and settings. For example, at the coastal site of Paphos, in Cyprus, resort developers were pitted against the Department of Antiquities, until a hotel owner realized that an ancient grotto discovered beneath his proposed hotel could be used as a tourist attraction.

Landscapes

The design of mitigating measures to address potential impacts on rural landscapes, townscapes, marine and cultural landscapes requires an appreciation of the *context*, such as rural and urban development and tourism issues, and sensitivity to sociocultural and community issues.

Fig. 24: The roofs of the ancient town of Lijiang in China create a striking townscape valued by many stakeholders including local tourists, historians, artists and the Naxi, who have lived in this region for centuries.

Fig. 25: Members of the Naxi community at Lijiang, wearing their traditional dress

In some cases, the long-standing interaction in an area between human settlement and the physical characteristics of the landscape is so exceptional that the area has been designated a UNESCO World Heritage Cultural Landscape.

Fig 26: This fossil desert in the Air and Tenere region of Niger has been designated as a UNESCO World Heritage Cultural Landscape.

The measures for mitigating potential impacts on landscapes are normally developed not only with the local community, but also in consultation with specialists who have local knowledge. For example:

- The ideal mitigating measure for a plan to develop a commercial site adjacent to a historic building will depend partly on the visual impact of the development in the context of the master plan for that section of the city, and may therefore require the involvement of a town-planner;
- The mitigating measures for the visual impact arising from modern high-rise structures such as transmission towers in a game park or historic site will depend on the location of the vantage point most favored by tourists, and should therefore be developed in liaison with a tourism specialist;
- The mitigating measures most appropriate for offsetting impacts by the introduction of a highway into a cultural landscape replete with historic religious buildings will require an in-depth understanding of the religious culture of the inhabitants, and their likely reaction to visitors and to the introduction of alien cultures. Thus design of mitigating measures will require the services of specialists able to interact with the religious leaders, the local community and the EA team.

The PCR team member usually facilitates discussions of possible mitigating measures by providing materials such as images of the potential changes to the landscape seen from different vantage points, audio-visual materials displaying alternative mitigating measures, and maps.

4.6.3 Mitigating Measures for Indirect Impacts

EA takes into account indirect as well as direct impacts. Thus the comments in 4.6.2 above apply to both types of impact. However, some useful observations may be made about the types of indirect impact that are frequently found to occur in the case of PCR.

One of the most common forms of indirect impact on PCR, and one which is sometimes overlooked, is that of access.

Reduced Access

Sometimes project developments lead to loss of access of a living-culture site, such as a place of worship, a historic community meeting place or a sacred site. While the project may not cause direct damage to the PCR, a reservoir, canal or highway, for example, may cut off access, or reduce access by disabled or elderly members of the community by rendering the PCR difficult or time-consuming to reach. Apart from the negative impact on the community of the reduced access, the PCR site may quickly deteriorate due to neglect arising from lack of use and eventual abandonment.

Such potential impacts may be identified and mitigated only if the cultural habits of the local people are fully appreciated, and pedestrian traffic to and from the site is mapped.

As in the case of direct impacts, the solutions are contextual, and thus vary widely. Sometimes the PCR is replaced at, or moved to, a new site. Sometimes the recommendations call for a bridge

to be built across a canal or highway. Where a reservoir has been created in a river valley, the community may now be physically divided, and the PCR issues may thus be part of a wider social problem, and may be addressed within the resettlement plan.

In one case in Africa, where PCR was discovered on a hill-top during the baseline data collection, the site became an island within a reservoir. The mitigating measures involved a community museum being built on the island, and local ferrymen were able to make a living by ferrying tourists to the island museum.

Increased Access

In some cases, it is *increased* access to PCR that has a negative impact, particularly where a project is developed in a remote area that has hitherto had few visitors.

The increased number of visitors having access may result, for example, from labor camps introduced during the project construction phase, increased traffic arising in the case of projects such as a highway, or tourism, especially where the projects is in an environmentally or culturally attractive location.

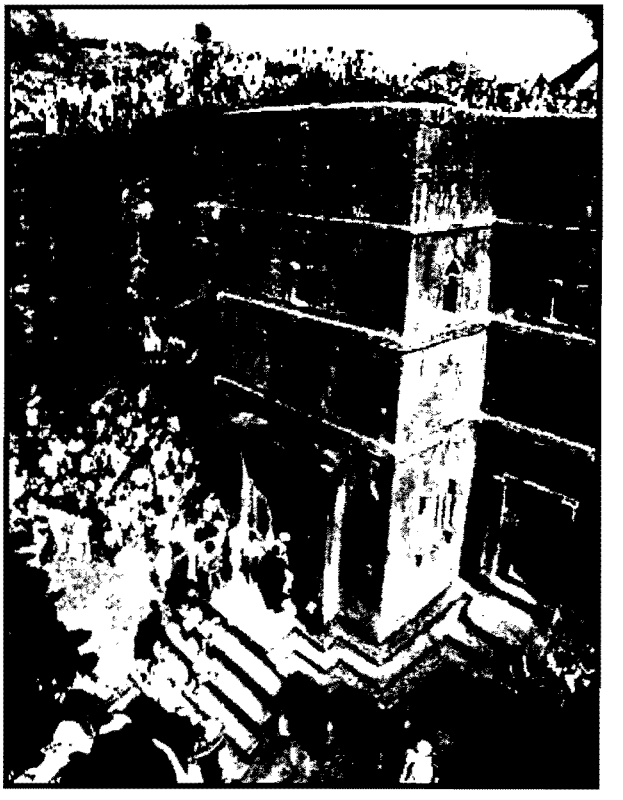


Fig. 27: The development of a new highway in Ethiopia has opened up some of its ancient rock-hewn churches to tourism, but this is creating new impacts on the previously remote churches, which are still used on a daily basis by the local people.

Mitigating measures vary according to the problem. In the case of sites jeopardized by an influx of migrant labor the possibility of employing local people wherever feasible is usually an important consideration. Labor camps should be well managed, with specific instructions regarding access to off-project sites. In addition, assistance should be given to local communities to improve security at PCR sites where necessary. Examples of such measures are discussed above under *Movable PCR.*

Where the existence of the project will give rise to a *general* increase in human traffic, particularly tourists, the design of appropriate mitigating measures involves determination of the carrying capacity of the site concerned, and institution of new site management arrangements. In some cases, the civil works of the project itself may open up easy access to a hitherto hidden PCR site, even though the traffic in the general

area may not be expected to increase. In such cases, this should be brought to the attention of the concerned authorities and stakeholders, who may otherwise be unaware of the issue, so that arrangements can be made to secure the site, or perhaps take advantage of the easier access by securing the site and providing parking and visitor facilities.

4.6.4 Mitigating Impacts on PCR by Cultural Heritage Projects

Particular attention should be paid to the mitigation of potential negative impacts on PCR arising from projects (or project components) designed to enhance PCR. The need for such mitigating measures often goes unrecognized, for it may be assumed that activities designed to have positive impacts on PCR would not pose a threat to them. In reality, such projects have sometimes had serious negative impacts either on the PCR they were designed to conserve, or on PCR of another type that were overlooked by the project proponents. Annex B5 sets out important issues relating to this problem, and typical impacts of this type.

It is important that the PCR specialists who are involved in the design of the mitigating measures for this type of impact should not be consultants to the project itself.

Suitable independent specialists may be sourced through some of the contacts listed in the *PCR Country Profile*, if available.

4.6.5 Impacts of Mitigating Measures

The EA Team leader should discuss with the team members, including the PCR member, whether the recommended measures for mitigating impacts on PCR might themselves have negative impacts. For example, archaeological excavations can have significant negative environmental impacts, and may be viewed by local residents as an unwanted encroachment, especially if they are in a sacred site such as the precincts of a religious building or burial ground.

4.7 Costing Mitigating Measures

Details of proposed institutional arrangements and budget requirements to implement the recommended mitigating measures are important to include in the EA report. Without such information, the report would be inadequate as an aid to decision-making.

Mitigating potential impacts on PCR can usually be accomplished at quite modest cost. However, in exceptional cases, the cost of avoiding negative impacts on an important PCR site might be significant. This might occur, for example, when a very large PCR site comes to light during the execution of an EA that has been commissioned after detailed project design, when it is too late to make basic design changes without incurring great expense. An example of such a case would be a highway or dam designed to be built directly over an extensive ancient Roman pavement.

In such cases — as in the case of a potential biophysical or social impact that would be very expensive to mitigate — the cost of mitigation will inevitably be balanced against the benefits of the project, and against the significance of the PCR concerned. Thus it will be necessary to assist that dialogue by elaborating further on the cultural significance of the site, and on the options for mitigation.[7]

The assessment of significance of such a site will require the EA team to consult the relevant national authorities. UNESCO, ICOMOS or ICROM may also be helpful in the case of PCR of national or international importance.

If the degree of specialization required to conduct such an analysis lies beyond the scope of the EA team, the report should say so, and make recommendations for a more comprehensive analysis of the PCR and the costs of alternative mitigating measures.

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[7] A popular book on this subject is Hardesty, D.L. and Little, B.J., 2000.

4.8 ASSESSING INSTITUTIONAL CAPACITY

The EA should make an assessment of the capacity of the institutions concerned to implement the PCR policy, and notably, the recommended mitigating measures. The sorts of issues typically covered by such an analysis include:

- The degree of awareness in the cultural authorities of the project development cycle, EA procedures and PCR;
- Inconsistencies, if any, between the national legislation for conservation of cultural heritage, and the requirements of EA, including national legislation and regulations;
- The capacity of the cultural authorities to provide the necessary information on PCR for project Screening and Scoping purposes, and to EA teams for the baseline data collection;
- The inventory systems in place regarding various types of PCR, including mapping systems;
- The procedures for licensing archaeological work within EA;
- The capacity of the cultural authorities to work with project sponsors and contractors in the efficient implementation of chance finds procedures;
- The capacity of the cultural authorities to conduct investigations of PCR during protracted construction periods, such as in the case of highways and pipelines.

4.9 DEVELOPING THE MANAGEMENT PLAN

Development of a physical cultural resources management plan is an integral part of the EA process. Typically, the plan includes measures for avoiding or mitigating any adverse impacts on physical cultural resources, provisions for the management of chance finds, any necessary measures for strengthening institutional capacity, a monitoring system to track progress of these activities, and takes into account the country's overall policy framework, national legislation and institutional capabilities in regard to physical cultural resources.

The proposed monitoring system should cover the expected impacts, and the implementation of the mitigating measures recommended in the EA report, as well as impacts which were not included in the impact assessment, possibly because it was thought that such PCR would not be affected.

In the case of a major project in a culturally sensitive area, or one involving, for example, a pipeline or large reservoir, which requires substantial archaeological investigations during project implementation, consideration should be given to instituting a program of independent monitoring and review.

Whenever it is considered possible for project-related activities to encounter archaeological or paleontological sites, or artifacts, the contractors should be required to follow procedures regarding chance finds. This will require inclusion of such provisions in the contract documents, for which the national legislation and the guidelines in Annex C3 of this Guidebook should be consulted.

4.10 TAKING AN OVERVIEW AND COMPILING THE EA REPORT

Before beginning the report, it may be noted that:

- The required structure of the report will probably have been provided in the TOR, and may depend on whether the project was categorized as an 'A' or a 'B';
- It will be useful to refer to Chapter 5, *Guidance for EA Reviewers*, to identify the sorts of issues that the EA reviewers may be looking for;
- The TOR may specify the management plan reporting requirements. If a stand-alone Environmental Management Plan (EMP) is required, the PCR Management Plan should be a section in the

EMP. If not, then the PCR Management Plan can constitute a chapter in the EA report.

It should be appreciated that the EA report is a management document, serving as a resource for management decisions. It must therefore be understandable to the layperson, including members of the public who may be consulted. Thus the main text should be written in layman's language; technical or esoteric material should be annexed. In particular, the significance of PCR of archaeological, architectural, historic or other scholarly importance, and which may potentially be partly or wholly destroyed, should be clearly explained in non-specialist language.

Normally information gathered during the EA on the subject of PCR should be published. However, if the PCR team member or any of the stakeholders, concerned parties, informants or advisors feel that exposure of the location, nature or value of the PCR, or the names of informants, might encourage theft or illegal sale or pose a potential threat to informants, these concerns should be made known to the borrower, and to the Bank staff involved, with a view to withholding such information from the EA report that is disclosed to the public.

CHAPTER 5

GUIDANCE FOR EA REVIEWERS

These guidance notes are designed to assist in the review of the PCR component of an EA report. The EA category of the project will have influenced the structure and format of the Environmental Assessment which has been conducted. In the case of a category 'B' project, the scope of work is usually narrower that that of a category 'A' project, and the EA report may not be a separate, 'stand-alone' document. Furthermore, a 'B' project EA report may not contain separate chapters such as 'Baseline', 'Impact Assessment', and so forth. Nonetheless, in terms of content, the requirements set out below generally apply for both 'A' and 'B' project assessments.

5.1 EXECUTIVE SUMMARY

There should be an Executive Summary, which clearly presents:

- The conclusions, in non-technical language;
- The degree of confidence that can be placed in the findings;
- Any likely significant PCR impacts and the resultant potential for conflict;
- An assessment of whether the predicted PCR impacts would occur with or without the project;
- Recommended PCR mitigating measures and their costs
- A clear report on whether or not the concerned and affected parties have agreed with the recommended measures:

5.2 POLICY, LEGAL AND REGULATORY FRAMEWORK

This section should contain reference to the following, including identification of any implications for the PCR component of the EA, such as special standards or requirements:

- The World Bank's EA policy OP/BP 4.01 and the PCR policy OP/BP 4.11;
- Sections of national EIA laws, regulations and guidelines relating to PCR;
- Sections of the national environmental conservation strategy, if any, relating to PCR;
- National, state/provincial or local legislation and regulations relating to:
  - Antiquities, including sale and export;
  - Procedures for addressing chance finds, in terms of ownership and requirements by the contractor and cultural authorities;
  - Archaeology, including the issue of permits;
- Relevant authorities charged with PCR identification, protection and management, their powers, the legal basis for their authority, and their actual capacity;
- PCR-related conventions and treaties to which the borrower country is signatory;
- Sites in the borrower country listed as World Heritage Sites according to the UNESCO World Heritage convention, or included in UNESCO's 'tentative' list under the same convention;
- Sites in the borrower country currently listed by other international agency in the field of PCR such as the World Monuments Fund, or ICOMOS, as being of national or international importance;

- Any national or provincial registers of PCR maintained by accredited authorities in the borrower country.

5.3 DESCRIPTION OF THE PROJECT

There should be a description of how the project will be constructed, commissioned, operated and decommissioned (if applicable), and the likely duration of each phase.

There should be maps and plans of the proposed project, including its physical appearance when completed.

Check that there is evidence that the EA team have understood the project, in terms of its likely impacts on PCR. Look for descriptions of the planned activities at each phase, such as the number of employees, the use of migrant workers, materials required, and transport arrangements.

5.4 ANALYSIS OF ALTERNATIVES

In cases where there are major PCR issues, check whether there is any analysis of alternative project sites or technologies which would avoid or minimize these impacts.

5.5 BASELINE

Check the extent to which the EA report justifies the baseline boundaries adopted for the purposes of addressing PCR issues. Look out for vague references to "the project area", which suggest that baseline boundaries were not established based on potential impacts, and that the team have simply taken the construction site boundaries as the baseline boundary.

- Check if the EA has considered all types of PCR that might be impacted, [8] covering:
- Living-culture PCR, as well as historical, archaeological and paleotological PCR;
- Natural and human-made PCR;
- Movable and immovable PCR;
- Unknown or invisible PCR.

Check that the data collection activity involved consultations with concerned parties and potentially affected communities, and that the sources of data were adequate and reliable. Items to be checked might include, for example, meeting schedules, accounts of meetings or interviews, maps and photographs.

Potential data sources might include cultural authorities, national or provincial PCR registers, universities and colleges, public and private PCR-related institutions, religious bodies, and local PCR non-governmental organizations and those active in socio-cultural affairs. Sources at the community level typically include, for example, community leaders and individuals, schools, religious leaders, scholars, PCR specialists, and local historians.

Check that the report cites the sources of the baseline data. If no source is mentioned, the information is unlikely to be primary data. It may have been taken from published sources.

Check that the project location and setting are clearly defined in the text and on a map of suitable scale.

Check that maps are provided showing PCR baseline data within the potential impact areas.

Check if the maps in the report have been drawn by the EA team based on the results of their research. If they are copies of published maps, or maps taken from the engineering feasibility study, they may be out of date, of unsuitable scale and/or lacking relevant information.

Check that statements such as, "There are no PCR in the project area" are substantiated by consultation with local people, specialists and concerned parties, and do not rely solely on official registers or inventories.

[8] These categories of PCR are not mutually exclusive.

Check that the EA report documents the cultural significance or value attributed by the concerned or affected parties to the PCR identified in the baseline. This will not normally be expressed in monetary terms, but the report should identify the nature of the cultural significance, for example, whether it is religious, ethnographic, historic, or archaeological. In the case of PCR of archaeological, architectural, paleontological or other scholarly or scientific value, the report should provide an assessment of the relative importance of the PCR in this regard locally, nationally and/or internationally.

5.6 Impact Assessment

Check that PCR are included in the impact matrix.

Check that the EA team have assessed possible PCR impacts for each project stage, for example, construction, commissioning, operations (if applicable). Annexes B1 to B6 list typical PCR impacts for different sectors.

Check for statements such as, "There will be no significant impacts on PCR", or, "Impacts on PCR will be only minor". In an EA report, such conclusions are too vague. The authors should be more specific, should describe the nature and extent of the impacts, and state precisely why they are considered to be insignificant or minor.

Check that the impact assessment covers any PCR issues anticipated in the TOR. Check that social impacts have been well covered. If they are not addressed adequately, then the result is likely to be that PCR associated with living culture will have been overlooked.

Check that cross-sectoral impacts have been considered. One method of verifying this is to examine each non-PCR impact in the impact matrix, and see if there might be a 'knock-on' impact on PCR (see example).

Example of Potential Indirect Impact on PCR

An irrigation project is planned to involve land-clearing. Due to the area to be taken up by the scheme, several hectares of trees will be clear-felled. This impact of 'construction' on 'flora' is duly noted in the impact matrix. However, the EA report states that there will be no impacts on PCR.

Upon closer examination, it is realized that the tree-felling will cause the local residents to go further afield for their fuelwood, and that as a result, they are likely to begin to encroach on a sacred grove two kilometers away, associated with a different community. This grove had not been included in the EA baseline, as it was thought to be too far from the project site to be an issue.

Check that the report has considered the possibility of accidents during construction, commissioning, decommissioning, or operations which might affect PCR, especially in urban settings, and which might call for special precautionary measures.

5.7 Mitigating Measures

Check if the consultations on the proposed mitigating measures were adequate. Consultations with concerned and affected parties are especially important in the case of measures to mitigate PCR impacts.

Check that the concerned and affected parties have accepted the mitigating measures being proposed.. There is no point in recommending measures to mitigate PCR impacts if the people who attribute the cultural significance to the PCR are not in accord with the proposals. Look for definite evidence of agreement with the proposals by the concerned and affected parties.

Check whether the recommended mitigating measures might themselves have environmental impacts. For example, archaeological excavations, while often being a recommended

mitigating measure to document PCR and remove them to a safe place, can have significant environmental impacts, and may also be viewed by local residents as an offensive encroachment, particularly in the case of a sacred site such as a cemetery.

Check that the cost of implementing and the timing of the recommended mitigating measures has been established.

5.8 MANAGEMENT PLAN

Check that there is a PCR management plan. It will normally constitute a section of the Environmental Management Plan, if there is one; otherwise it may simply be part of the recommendations. The management plan should clearly:

- Schedule the implementation of the proposed PCR mitigating measures and PCR monitoring, if any, taking into account the weather pattern, and identify roles and responsibilities for such implementation;
- Identify procedures for handling chance finds, including the role and responsibilities of the cultural authorities and the contractor;
- Identify procedures for addressing PCR impacts which may occur during implementation but were not predicted in the impact assessment.

5.9 RECOMMENDATIONS

Check that the report makes a clear recommendation that it is viable for the project to proceed, in so far as PCR issues are concerned.

ANNEX A

BASIC INFORMATION

A1 Operational Policy OP 4.11: Physical Cultural Resources
A2 Bank Procedures BP 4.11: Physical Cultural Resources
A3 Examples of Common Physical Cultural Resources

ANNEX A1

OPERATIONAL POLICY OP 4.11: PHYSICAL CULTURAL RESOURCES

Note: OP and BP 4.11 together replace OPN 11.03, *Management of Cultural Property in Bank-Financed Projects.* OP and BP 4.11 are to be read in conjunction with OP and BP 4.01, *Environmental Assessment.*

Introduction

1. This policy addresses physical cultural resources,[1] which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or underwater. Their cultural interest may be at the local, provincial or national level, or within the international community.

2. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.

Objective

3. The Bank[2] assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects[3] that it finances. The impacts on physical cultural resources resulting from project activities, including mitigating measures, may not contravene either the borrower's national legislation, or its obligations under relevant international environmental treaties and agreements.[4]

Physical Cultural Resources within Environmental Assessment

4. The borrower addresses impacts on physical cultural resources in projects proposed for Bank financing, as an integral part of the environmental assessment (EA) process. The steps elaborated below follow the EA sequence of: screening; developing terms of reference (TOR); collecting baseline data; impact assessment; and formulating mitigating measures and a management plan.[5]

5. The following projects are classified during the environmental screening process as Category A or B, and are subject to the provisions of this policy: (a) any project involving significant excavations, demolition, movement of earth, flooding, or other environmental changes; and (b) any project located in, or in the vicinity of, a physical cultural resources site recognized by the borrower. Projects specifically designed to support the management or conservation of physical cultural resources are individually reviewed, and are normally classified as A or B.[6]

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1 Also known as 'cultural heritage', 'cultural patrimony', 'cultural assets' or 'cultural property'.
2 "Bank" is as defined in OP/BP 4.01, *Environmental Assessment.*
3 The project is described in Schedule 2 to the Financing Agreement. This policy applies to all components of the project, regardless of the source of financing.
4 This includes the Convention concerning the Protection of the World Cultural and Natural Heritage, 1972 (UNESCO World Heritage Convention).
5 See OP 4.01, *Environmental Assessment.*
6 For definitions of project categories A and B, see OP 4.01, *Environmental Assessment,* paragraph 8.

6. To develop the TOR for the EA, the borrower, in consultation with the Bank, relevant experts, and relevant project-affected groups, identifies the likely physical cultural resources issues, if any, to be taken into account by the EA. The TOR normally specify that physical cultural resources be included in the base-line data collection phase of the EA.

7. The borrower identifies physical cultural resources likely to be affected by the project and assesses the project's potential impacts on these resources as an integral part of the EA process, in accordance with the Bank's EA requirements.[7]

8. When the project is likely to have adverse impacts on physical cultural resources, the borrower identifies appropriate measures for avoiding or mitigating these impacts as part of the EA process. These measures may range from full site protection to selective mitigation, including salvage and documentation, in cases where a portion or all of the physical cultural resources may be lost.

9. As an integral part of the EA process, the borrower develops a physical cultural resources management plan[8] that includes measures for avoiding or mitigating any adverse impacts on physical cultural resources, provisions for managing chance finds,[9] any necessary measures for strengthening institutional capacity, and a monitoring system to track the progress of these activities. The physical cultural resources management plan is consistent with the country's overall policy framework and national legislation and takes into account institutional capabilities in regard to physical cultural resources.

10. The Bank reviews, and discusses with the borrower, the findings and recommendations related to the physical cultural resources aspects of the EA, and determines whether they provide an adequate basis for processing the project for Bank financing.[10]

Consultation

11. As part of the public consultations required in the EA process, the consultative process for the physical cultural resources component normally includes relevant project-affected groups, concerned government authorities, and relevant nongovernmental organizations in documenting the presence and significance of physical cultural resources, assessing potential impacts, and exploring avoidance and mitigation options.

Disclosure

12. The findings of the physical cultural resources component of the EA are disclosed as part of, and in the same manner as, the EA report.[11] Exceptions to such disclosure would be considered when the borrower, in consultation with the Bank and persons with relevant expertise, determines that disclosure would compromise or jeopardize the safety or integrity of the physical cultural resources involved or would endanger the source of information about the physical cultural resources. In such cases, sensitive information relating to these particular aspects may be omitted from the EA report.

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7 See OP 4.01, *Environmental Assessment.*

8 If there is an Environmental Management Plan, it incorporates the physical cultural resources management plan. See OP 4.01, *Environmental Assessment*, Annex C.

9 For the purposes of this policy, 'chance finds' are defined as physical cultural resources encountered unexpectedly during project implementation.

10 See OP 4.01, *Environmental Assessment*, paragraph 5.

11 See *The World Bank Policy on Disclosure of Information*, 2002, paragraph 31.

Emergency Recovery Projects

13. This policy normally applies to emergency recovery projects processed under OP 8.50, *Emergency Recovery Assistance*. OP/BP 4.01, *Environmental Assessment*, sets out the application of EA to such projects.[12] When compliance with any requirement of OP 4.11, *Physical Cultural Resources* would prevent the effective and timely achievement of the objectives of an emergency recovery project, the Bank may exempt the project from such a requirement, recording the justification for the exemption in the loan documents. However, the Bank requires that any necessary corrective measures be built into either the emergency recovery project or a future lending operation.

Specific Investment Loans and Financial Intermediary Loans

14. The physical cultural resources aspects of subprojects financed under Bank projects are addressed in accordance with the Bank's EA requirements.[13]

Country Systems

15. The Bank may decide to use a country's systems to address environmental and social safeguards issues in a Bank-financed project that affects physical cultural resources. This decision is made in accordance with the requirements of the applicable Bank policy on country systems.[14]

Capacity Building

16. When the borrower's capacity is inadequate to manage physical cultural resources that may be affected by a Bank-financed project, the project may include components to strengthen that capacity.[15]

17. Given that the borrower's responsibility for physical cultural resources management extends beyond individual projects, the Bank may consider broader capacity building activities as part of its overall country assistance program.

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[12] See OP 4.01, *Environmental Assessment*, paragraph 12.

[13] As set out in paragraphs 9, 10, and 11 of OP 4.01, *Environmental Assessment*. The relevant requirements in these paragraphs apply also to physical cultural resources aspects of other projects which are similarly designed to finance multiple sub-projects that are identified and appraised during the course of project implementation (e.g., social investment funds (SIFs) and community-driven development projects (CDDs)).

[14] OP/BP 4.00, *Piloting the Use of Borrower Systems to Address Environmental and Social Safeguards Issues in Bank-Supported Projects*, which is applicable only to pilot projects using borrower systems, includes requirements that such systems be designed to meet the policy objectives and adhere to the operational principles related to physical cultural resources identified in OP 4.11, *Physical Cultural Resources*.

[15] See OP 4.01, *Environmental Assessment*, paragraph 13.

ANNEX A2

BANK PROCEDURES BP 4.11: PHYSICAL CULTURAL RESOURCES

Physical Cultural Resources

Note: OP and BP 4.11 together replace OPN 11.03, *Management of Cultural Property in Bank-Financed Projects*. OP and BP 4.11 are to be read in conjunction with OP and BP 4.01, *Environmental Assessment*.

Introduction

1. Physical cultural resources may not be known or visible; therefore, it is important that a project's potential impacts on physical cultural resources be considered at the earliest possible stage of the project planning cycle.

Physical Cultural Resources within Environmental Assessment

2. The task team (TT) advises the borrower on the provisions of OP 4.11 and their application as an integral part of the Bank's environmental assessment (EA) process as set out in OP/BP 4.01, *Environmental Assessment*. The steps elaborated below follow the project cycle processes of screening, developing terms of reference (TOR) for the EA, preparing and reviewing the EA report, and project appraisal, supervision and evaluation.

Environmental Screening

3. As part of the environmental screening process, the TT determines whether the project (a) will involve significant excavations, demolition, movement of earth, flooding or other environmental changes; or (b) will be located in, or in the vicinity of, a physical cultural resources site recognized by competent authorities of the borrower; or (c) is designed to support management of physical cultural resources. If the project has any of the characteristics set out in (a) or (b), it is assigned to either Category A or B, in accordance with OP 4.01, *Environmental Assessment*. If the project has the characteristic set out in (c), it is normally assigned to either Category A or B. The procedures set out below are followed for all projects so categorized.[1]

4. The TT requests that the borrower inform the Bank of the relevant requirements of its legislation and of its procedures for identifying and mitigating potential impacts on physical cultural resources, including provisions for monitoring such impacts, and for managing chance finds.[2]

Terms of Reference for the EA

5. The TT advises and assists the borrower, as necessary, in drafting the TOR for the physical cultural resources component of the EA. In preparing the TOR, the borrower identifies the likely major physical cultural resources issues, if any, to be taken into account in the EA. This identification of the possible presence of physical cultural

[1] For definitions of project categories A and B, see OP 4.01, *Environmental Assessment*, paragraph 8.

[2] For the purposes of this policy, chance finds are defined as physical cultural resources encountered unexpectedly during project implementation.

resources is normally conducted on-site, in consultation with relevant experts and relevant project-affected groups.

6. The TOR propose spatial and temporal boundaries for the on-site collection of baseline data on physical cultural resources potentially affected by the project, and specify the types of expertise required for the physical cultural resources component of the EA.

Consultation

7. Since many physical cultural resources are not documented, or protected by law, consultation is an important means of identifying such resources, documenting their presence and significance, assessing potential impacts, and exploring mitigation options. Therefore, the TT reviews the mechanisms established by the borrower for consultation on the physical cultural resources aspects of the EA, in order to ensure that the consultations include meetings with project-affected groups, concerned government authorities and relevant non-governmental organizations.

Baseline and Impact Assessment

8. The TT ensures that the physical cultural resources component of the EA includes (a) an investigation and inventory of physical cultural resources likely to be affected by the project; (b) documentation of the significance of such physical cultural resources; and (c) assessment of the nature and extent of potential impacts on these resources.

Mitigating Measures

9. When the project may have adverse impacts on physical cultural resources, the EA includes appropriate measures for avoiding or mitigating these impacts.

Capacity Assessment

10. The EA assesses the borrower's capacity for implementing the proposed mitigating measures and for managing chance finds, and where appropriate, recommends capacity building measures.

Management Plan

11. The EA involves the preparation of a physical cultural resources management plan[3] that includes (a) measures to avoid or mitigate any adverse impacts on physical cultural resources; (b) provisions for managing chance finds[4]; (c) any necessary measures for strengthening institutional capacity for the management of physical cultural resources; and (d) a monitoring system to track the progress of these activities.

Review

12. When reviewing the findings and recommendations of the EA, the TT discusses with the borrower the physical cultural resources components of the EA, including the physical cultural resources management plan, and determines whether these components provide an adequate basis for processing the project for Bank financing.

Disclosure

[3] If there is an Environmental Management Plan, it incorporates the physical cultural resources management plan. See OP 4.01, *Environmental Assessment*, Annex C.

[4] If a chance find occurs for a project that does not require an EA report, the borrower will prepare a timely chance find management plan, satisfactory to the Bank.

13. The TT consults with the borrower and persons with relevant expertise on whether disclosure of the findings of the physical cultural resources component of the EA would jeopardize the safety or integrity of any of the physical cultural resources involved. In addition, the TT consults the borrower to determine whether disclosure could endanger the source of information regarding the physical cultural resources. In such cases, sensitive information relating to these particular aspects, such as the precise location or value of a physical cultural resource, may be omitted from the EA report.[5]

Project Appraisal

14. As appropriate, the appraisal team includes relevant physical cultural resources expertise.

15. During appraisal, the TT ensures that the findings and recommendations of the physical cultural resources components of the EA, including the physical cultural resources management plan, are adequately reflected in project design, and are recorded in the Project Appraisal Document (PAD).

16. The TT ensures that the estimated cost of implementing the physical cultural resources management plan is included in the project budget.

Supervision and Evaluation [6]

17. For projects in which the physical cultural resources management plan incorporates provisions for safeguarding physical cultural resources, supervision missions include relevant expertise to review the implementation of such provisions.

18. During project supervision, the TT monitors the implementation of the physical cultural resources management plan, including provisions for the treatment of chance finds. The TT also ensures that chance finds procedures are included in procurement documents, as appropriate. The TT monitors the treatment of any chance finds and any other impacts on physical cultural resources that may occur during project implementation, and records relevant findings in the Implementation Status and Results Reports (ISRs).

19. Implementation Completion Reports (ICRs) assess the overall effectiveness of the project's physical cultural resources mitigation, management, and capacity building activities, as appropriate.[7]

Capacity Building

20. The TT reviews the need, if any, for enhancement of the borrower's capacity to implement this policy, particularly in respect of information on physical cultural resources, on-site training, institutional strengthening, inter-institutional collaboration, and rapid-response capacity for handling chance finds. The TT then considers the need for such capacity enhancement, including project components to strengthen capacity.[8] When the needs extend beyond the scope of the project, the TT draws the attention of the relevant Country Director to the possibility of including such capacity building within the overall country assistance program.

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5 See the *World Bank Policy on the Disclosure of Information*, 2002, paragraph 31.
6 See OP/BP 13.05, *Project Supervision.*
7 See OP/BP 13.55, *Implementation Completion Reporting.*
8 See OP 4.01, *Environmental Assessment*, paragraph 13.

ANNEX A3

EXAMPLES OF COMMON PHYSICAL CULTURAL RESOURCES

Human-made

- Religious buildings such as temples, mosques, churches
- Exemplary indigenous or vernacular architecture
- Buildings, or the remains of buildings, of architectural or historic interest
- Historic or architecturally important townscapes
- Historic roads, bridges, walls, dams, fortifications, water works
- Archaeological sites (unknown or known, excavated or unexcavated)
- Commemorative monuments
- Historic sunken ships

Natural

- Holy waters and holy wells
- Sacred waterfalls
- Sacred groves and individual sacred trees
- Historic trees
- Sacred mountains and volcanoes
- Caves currently or previously used for human habitation or social activity
- Paleontological sites (ie., deposits of early human, animal or fossilized remains)
- Natural landscapes of outstanding aesthetic quality

Combined Human-made and Natural

- Sites used for religious or social functions such as weddings, funerals, or other traditional community activities
- Places of pilgrimage
- Burial grounds
- Family graves in the homestead
- Historic gardens
- Cultural landscapes
- Natural stones bearing historic inscriptions
- Historic battlegrounds
- Combined human and natural landscapes of aesthetic quality
- Cave paintings

Movable

- Historic or rare books and manuscripts
- Paintings, drawings, icons, jewelry
- Religious artifacts
- Historic costumes and fabrics
- Memorabilia relating to the lives of prominent individuals or to events such as historic battles
- Statues, statuettes and carvings
- Modern or ancient religious artifacts
- Pieces broken off from monuments or historic buildings
- Unregistered archaeological artifacts
- Antiquities such as coins and seals
- Historic engravings, prints and lithographs
- Natural history collections such as shells, flora, minerals

ANNEX B

TYPICAL ADVERSE IMPACTS ON PHYSICAL CULTURAL RESOURCES

The material in this Annex sets out typical adverse impacts on PCR by various types of project. The list is not exhaustive, but readers will find most projects contain components included in the types of project covered.

In all cases, the reader is reminded that the greatest threat to PCR arises from not identifying them in the first place.

General Guidance:

B1 Common Project Activities and Features: General Guidance

Project-Specific Guidance:

B2 Roads
B3 Projects involving Dams and Reservoirs
B4 Urban Development Projects
B5 Cultural Heritage Projects, or Projects with Cultural Heritage Components
B6 Coastal Zone Projects

B1: COMMON PROJECT ACTIVITIES AND FEATURES: GENERAL GUIDANCE

Negative impacts on PCR generally fall into the following broad categories: damage, destruction, wear, removal, burial, modification, change of use, neglect, denial of access, and desecration. Each of these impacts may, in turn, arise from a variety of causes. The question is: what aspects of a project could cause such impacts to occur? Every project is, of course, different, but experience shows that there is a general pattern. Below is a list of project activities or features which commonly give rise to negative impacts on PCR, divided into two periods: project construction and commissioning, and operations. The types of PCR typically impacted are shown in *italics*. Note that the PCR impacted are not necessarily located on the project construction or engineering sites, and in some cases may be far away.

Note that for projects involving dams and reservoirs, roads, urban development, cultural heritage and coastal zone projects, Annexes B2 to B6 provide more detailed guidance. This Annex is designed primarily for projects that do not fit one of those broad types.

Project Activities or Features typically having Negative Impacts on PCR:

Construction and Commissioning Phase

Work camps:

- Vandalism, theft and illegal export of *movable PCR*, and of pieces of *monumental PCR* accessible directly or indirectly to migrant laborers.
- Desecration of *sacred sites.*

Excavation, Construction and Soil Compaction:

- Direct physical damage to, or destruction of, *human-made, natural*, and *buried PCR* on site.

Construction Traffic:

- Vibration, air, soil and water pollution, leading to damage to *natural and human-made PCR* in the vicinity.

Use of Heavy Construction Equipment:

- Vibration, damaging *built PCR* in the vicinity.
- Soil compaction, damaging *buried PCR* (*archaeological* and *paleontological*) on site, and damaging pipelines and drains serving *built PCR* in the vicinity.

Use of Explosives:

- Air pollution and vibration, leading to landslides and damage to *buildings and natural PCR* in the vicinity.

Creation of Large or Linear Construction Sites:

- Barrier effects causing difficulty or denial of access by community to *living-culture PCR.*

Inundation:

- Submergence or destruction of *human-made*, *natural* or *buried PCR*. Barrier to access of all types of PCR.
- Raised water table can lead to damage to *all types of PCR*. Damage to aesthetics of *scenic landscapes*.

Resettlement:

- Denial of access to *all types of PCR* formerly used by community.
- Abandonment of *all types of PCR*, leading to neglect.
- Damage/destruction of *man-made*, *natural* or *buried PCR* in resettlement sites.

Waste Disposal or Landfill:

- Burial or damage to *natural*, *buried* or *underwater PCR*.

Quarrying or Mining:

- Damage to aesthetics of *townscape* or *landscape*.
- Damage or destruction of *buried PCR* on site;

Operations Phase

New and Upgraded Roads:

- Increased human traffic enjoying improved access to *PCR of public interest* leading to increased wear and damage, sacrilege of *sacred sites*, theft and vandalism of *movable and breakable PCR*.
- New highways cutting off access *to living-culture PCR* by residents of settlements on other side of the highway.
- Increased air pollution and vibration from traffic causing damage to *man-made PCR*, particularly monuments and buildings.
- Increased noise pollution interfering with enjoyment of PCR such as *tourist destinations*, *historic buildings, religious establishments* and *cemeteries*.
- In scenic areas, obtrusive highways having a negative visual impact on the landscape.
- *Roads and bridges which themselves constitute PCR* being damaged by increased traffic.

Reservoir Operations or Irrigation:

- Shoreline erosion exposing *archaeological PCR*, leading illegal digging and looting.
- Reduced sediment load speeding up river flows, eroding banks of estuary, undermining *man-made PCR* such as monuments.

Induced Development:

- Induced development leading to increased wear and damage, sacrilege of *sacred sites*, theft and vandalism of *movable and breakable PCR*, and damage to the aesthetics of *scenic landscapes* and *townscapes*.

Poor Drainage:

- Resultant erosion leading to exposure, *damage* and looting of *archaeological PCR*.

Steep and Unstable Embankment Cuts:

- Collapse leading to exposure, damage and theft of *built, natural* and *archaeological PCR.*

Factories and other Facilities using Heavy Equipment:

- Increased noise pollution interfering with enjoyment of PCR such as *tourist destinations, historic buildings, religious establishments* and *cemeteries.*
- Damage to the aesthetics of *scenic landscapes* and *townscapes.*

Urban Development:

- Changes in demography or settlement patterns leading to decay of inner cities and abandonment and neglect of older residential areas containing *built PCR* such as *vernacular architecture.*
- Developments which are out-of-character with their surroundings diminishing the aesthetic value of the *townscape*, decline in property values and ultimately, neglect of *built PCR* in the area.
- Damage to aesthetics of *scenic townscapes.*

Cultural Heritage Restoration:

- Change of status, ownership or use resulting in altered settlement patterns and 'gentrification', leading to *abandonment of the PCR* by the original users.
- Use of unsympathetic materials or over-restoration resulting in negative impacts on the *townscape.* Increased use leading to excessive wear and damage *to built PCR.*

Cultural Heritage Inventorying:

- Inventorization, mapping and publishing of PCR encouraging theft and illegal trafficking of *movable PCR.*
- Introduction of excessively strict historic buildings code leading to difficulty in modernization, resulting in abandonment and neglect of *historic buildings.*

Land or Protected Areas Management:

- Change of status, ownership or use of land resulting indirectly in neglect, damage, destruction or change of use of *all types of PCR*;

Increased pressure on Land:

- Increased pressure resulting in land-clearing and deforestation activities, causing damage to *all types of* PCR.

B2: ROADS

To avoid confusion in the terminology, the following categories of road project are adopted here[1]:

(i) Road Maintenance Projects
Routine or periodic works to maintain the road in working condition. All of the work is done on the existing platform.

- Routine works, patching potholes, clearing drains; or
- Periodic works such as resurfacing, line marking, bridge maintenance.

(ii) Road Rehabilitation Projects
Bringing existing deteriorated roads to previous/original condition. All of the work is done on the existing platform. No additional land acquisition is needed.

- Improving drainage, slopes, embankments and/or other structures
- Strengthening pavements
- Complete resurfacing
- Recuperating civil works

(iii) Road Improvement Projects
Improving road specifications. Most of the work is done on the existing platform or right of way. Additional land acquisition may be needed.

- Widening lands and shoulders
- Adding extra lanes in steep inclines
- Improving curves
- Strengthening bridges

(iv) Road Upgrading Projects
Changing road category (eg seasonal to all-weather, secondary to primary, or from gravel to paved). Land acquisition is needed in most cases.

- Adding new lanes (2 to 4, 4 to 6, etc)
- Changing road surface (such as from gravel to paved)
- Widening intersections

(v) New Road Construction Projects
New projects built on a new alignment. Major land acquisition is needed.

- New roads
- Bypasses
- Realignments (changing in route)

[1] Based on QUINTERO, J., April, 1997.

1. Important Issues

- Although road improvements, upgrading and new construction are most likely to directly encounter PCR, maintenance and rehabilitation projects may also have impacts through activities such as diversions, quarrying, establishment of work camps, use of construction equipment, the increased volume of traffic, and improvement of access to PCR.

- Roads are often among the most historic areas of a country, especially important trade routes, some of which go back several centuries. Thus PCR are frequently to be found in the vicinity of major roads.

- For the above reason, activities such as improvement and upgrading of long-established roads, often encounter more PCR than the construction of new roads.

- Road-widening in urban areas rich in cultural heritage requires particular attention, as the construction works may have direct negative impacts on PCR, and the increased traffic volume will often have long-term impacts on historic buildings in the vicinity. Increasingly, historic urban centers are being bypassed in preference to road-widening.

- As many roads connect or pass through old-established population centers, the EA team must be alert to not only to obvious PCR such as buildings and monuments, but also to living-culture PCR, such as a sacred trees and graves, as well as archaeological material.

- In some cases, the existing road may itself be classified as cultural heritage. In such cases, the EA team must report upon the likely negative impacts on the existing road, including associated features such as historic bridges.

- Improved access resulting from road projects can have both positive and negative impacts on PCR. If controlled, the increased human traffic can provide significant income-generation potential for the local community. If uncontrolled, it can lead to both theft, inadvertent damage, and the unacceptable exposure of sacred sites.

- In an effort to minimize the costs of developing the baseline, there is a tendency in some cases to conduct road project EAs at pre-feasibility level, ie., limiting the study to broad environmental issues and leaving the contractors to sort out more detailed problems during construction. This practice reflects a commonly held supposition that the only issue which might be met along the alignment is simple compensation for loss of assets. However, the approach is particularly problematic with respect to community-level PCR such as graveyards, sacred natural sites and ancestral lands. Not only are contractors unlikely to be competent in this sensitive field, but failure to adequately address the issues concerned can lead to grave social and political problems and expensive project delays.

- Discovery of PCR during EA investigations can contribute to an expansion of the national cultural heritage inventory, and can provide income-generating opportunities for the community, for example through tourism development.

2. Typical Impacts of Road Projects on PCR during Construction

Direct Impacts

Activity or Feature	Impact
Expropriation of land by establishment of new road corridor, road realignment or widening, diversions, work camps and access roads	(i) There may be direct destruction or damage to PCR, especially unidentified natural PCR and buried material; (ii) Positive impacts may also occur, through the discovery of hitherto unknown sites or artifacts.
New road alignment crossing through PCR such as a heritage area or cultural landscape	A major road cutting through an area rich in PCR creates a barrier which can: (i) Interfere with the management and functioning of the area; (ii) Create a negative visual impact by detracting from the landscape or blocking the view.
Use of explosives	Vibration can result in damage to buildings, and cause landslides in cliffs and escarpments which may expose, damage or destroy buried material and features such as cave dwellings.
Quarrying	Quarrying can damage the aesthetic quality of the landscape, and damage or destroy buried PCR.
Waste disposal	Indiscriminate dumping of waste material may cover, or damage, natural and built PCR.
New road alignments, and major cut and fill zones in landscape of aesthetic value	New road alignments, and major cut and fill zones which are out of character with the terrain, can damage the aesthetic value of the landscape, leading to negative visual impacts.
Deforestation along, or adjacent to, road corridor	Unnecessary or excessive deforestation modifies the landscape and can have negative visual impacts.
Vibration, air and soil pollution by the use of construction equipment	This can cause damage to both built and natural PCR, and to movable artifacts such as manuscripts and vestments.
Soil compaction by heavy construction equipment	Soil compaction can damage buried material, especially archaeological sites incorporating chambers.
Accidents	Construction accidents, especially involving heavy equipment in an urban cultural heritage area, can directly damage PCR

Indirect Impacts

Activity or Feature	Impact
Construction of features such as access roads, diversions, camps	Interrupting access to cultural sites can lead to inconvenience and danger for the community, and socio-cultural problems.
Establishment of work camps	The workforce may gain unregulated access to PCR sites, resulting in accidental damage, vandalism, or the looting of movable artifacts.
Resettlement:	Resettlement can lead to negative impacts on PCR: (i) The relocation of communities away from cultural sites can lead to abandonment of PCR sites; (ii) The resettlement may cause community-based collections of artifacts to be broken up, lost or abandoned; (ii) Land-clearing and civil works may affect PCR in, or in the vicinity of, the new settlement area.

3. Typical Impacts of Road projects on PCR after Construction

Direct Impacts

Activity or Feature	Impact
Poor drainage for run-off from road surface	This can cause erosion of the adjoining land, which can lead to exposure of damage to PCR such as graves and archaeological resources;
Poor drainage, or inappropriate construction of drains, for water from adjoining land	(i) This can result in gulley erosion, resulting in damage to PCR; (ii) With no drainage, a raised road platform can behave like a dam, changing the water table, and causing negative impact on natural, buried and built PCR;
Steep and unstable embankment cuts	Collapse of embankments can lead to exposure and damage to natural PCR such as caves, buried and built PCR.
Traffic vibration and air pollution:	These cause direct damage to both natural and built PCR.
Traffic noise pollution	Noise pollution can interfere with the use and enjoyment of PCR such as tourist destinations, historic buildings, religious establishments and cemeteries.
Increased traffic volume	Where the existing road, or associated features such as historic bridges, are themselves regarded as PCR, increased vehicular traffic may damage or endanger the building or road fabric

Indirect Impacts

Activity or Feature	Impact
Rehabilitated, improved, upgraded or new road providing easier access to cultural sites	(i) Improved but *regulated* access to PCR can lead to increased human traffic, resulting in positive impacts: tourism-related income-generating activities, and wider academic scholarship. (ii) Improved but *unregulated* access to PCR can lead to increased human traffic, resulting in damage and deterioration of both natural and built sites, and unacceptable exposure of sacred sites. It can also result in looting of movable artifacts (including breakage off sections of immovable monuments), and can lead to the desecration of religious sites. (iii) In the case of road upgrading or new construction, The increased traffic volume, or new alignment, may cut off ready access to PCR, which may in turn result in inconvenience, loss of livelihood or danger for the local community, and ultimately in reduced maintenance and conservation of the PCR concerned.
Increased traffic volume	An increased volume of traffic can (and is often expected to) lead to induced development along the highway and along its tributary roads. This can lead to unregulated access to PCR and a loss of control of PCR by the local community.
Loss of land expropriated for new or improved road	Through increased pressure on land and fuelwood, land-clearing for new road construction can lead to further land-clearing in adjacent or nearly areas, leading in turn to cultivation and deforestation, and subsequent damage to PCR such as archaeological sites and sacred groves.

B3: PROJECTS INVOLVING DAMS AND RESERVOIRS

1. Important Issues

- Environmental settings which lend themselves to projects involving dams and reservoirs often prove to have been conducive to early and sustained human settlement.2 Thus they are often rich in paleontological and archaeological material, as well as natural PCR with religious or other cultural associations with living communities, such as sacred trees and holy waters.

- Such projects generally have:

  (i) Wide-ranging direct impacts on both the human and biophysical environment;

  (ii) Indirect impacts arising especially from the loss of land and changes in access to resources, and

  (iii) Longer-term impacts such as induced development, land-use changes, modifications to patterns of dry-season cattle grazing, and changes in agricultural and settlement patterns downstream.

- Because of the indirect and inter-sectoral nature of these impacts, it is important that assessment of impacts on PCR should not be confined solely to areas immediately affected by inundation or construction works.

- Discovery of PCR during EA investigations for such projects can contribute to an expansion of the national cultural heritage inventory, and can provide income-generating opportunities for the local community.

[2] World Commission on Dams, 2000, p. 117.

2. Typical Impacts of Dam and Reservoir Projects on PCR during Project Construction

Direct Impacts

Activity or Feature	Impact
Expropriation of land by establishment of dam site, access roads, penstock, transmission line corridors and work camps	(i) There may be direct destruction or damage to PCR, especially unidentified natural PCR and buried material; (ii) Positive impacts may also occur, through the discovery of hitherto unknown sites or artifacts. (iii) Through increased pressure on land and fuelwood, land-expropriation can lead to further land-clearing in adjacent or nearly areas, leading in turn to cultivation and deforestation, and subsequent damage to PCR such as archaeological sites and sacred groves.
Erection of dam, penstock and power station	These features can be an intrusion in the landscape in the case of aesthetically sensitive areas.
Clearing of transmission line corridor and erection of transmission line towers	This can cause destruction or damage to PCR, and an intrusion in the landscape in the case of aesthetically sensitive areas.
Excavation of dam site, borrow pits and civil works	Excavation can cause direct damage or destruction of PCR, especially archaeological sites.
Quarrying, spoil areas and waste dumps	Hillside scars and other landscape damage associated with these activities can have a negative visual impact, especially in scenically sensitive areas.
Air and water pollution from construction works	These pollutants can cause direct damage to PCR including natural and movable artifacts in the vicinity.
Vibration, air and soil pollution by the use and movement of heavy equipment and vehicles	This can cause damage to both built and natural PCR, particularly historic buildings.
Soil compaction by heavy construction equipment	Soil compaction can damage buried material, especially archaeological sites incorporating chambers.
Use of explosives	Resultant vibration can result in damage to buildings, and cause landslides in cliffs and escarpments which may expose, damage or destroy buried material and features such as cave dwellings.
Waste disposal	Indiscriminate dumping of waste material may cover, or damage, natural and built PCR.
Deforestation along, or adjacent to, the reservoir	Unnecessary or excessive deforestation modifies the landscape and can have negative visual impacts.
Accidents	Construction accidents, especially involving heavy equipment in an urban cultural heritage area, can directly damage PCR

Indirect Impacts

Activity or Feature	Impact
Construction of features such as canals, penstocks, quarries, access roads, work camps	Barrier effect of these features can reduce access to PCR, leading to inconvenience and danger for the community, and socio-cultural problems.
Establishment of work camps	The workforce may gain unregulated access to PCR sites, resulting in accidental damage, vandalism, or the looting of movable artifacts.
Uncontrolled residential development within the transmission line corridor	Impacts on invisible PCR such as archaeological sites.

3. Typical Impacts on PCR during Commissioning

Direct Impacts

Activity or Feature	Impact
Inundation of reservoir	• Inundation results in coverage or destruction of PCR in or on the inundated land, including natural PCR, archaeological, paleontological and unregistered burial sites. • Resultant changes in the landscape can have negative visual impacts and loss of actual or potential visitor amenities such as waterfalls, camp sites and downstream tourist sites. Note, however, that the visual impact of a reservoir can also be positive. • The reservoir can have a barrier effect, reducing or barring access to living-culture PCR such as a temple. • Inundation can raise the water table, which can have negative impacts on PCR in or on the shoreline, and adjoining lands
Raising the level of an existing body of water	Raising the water level of a river or lake can have impacts on the lake shore, and lead to river bank erosion of, for example, built PCR and caves.

Indirect Impacts

Activity or Feature	Impact
Resettlement:	Resettlement of residents displaced by the inundation can lead to negative impacts on PCR: (i) The relocation of communities away from cultural sites can lead to abandonment of PCR sites; (ii) The resettlement may cause community-based collections of artifacts in the hands of individual households to be broken up, lost or abandoned; (ii) Land-clearing, excavation and changes in the water table of the new settlement area may affect PCR in, or in the vicinity of, the area.

4. Typical Impact of Dam and Reservoir Projects on PCR during Project Operations

Direct Impacts

Activity or Feature	Impact
Reservoir operations	• Reservoir shoreline erosion can undermine built PCR and expose subsurface archaeological remains, leading to illegal digging and looting; • Salinization of floodplain lands can cause damage to archaeological sites and building foundations; • Changes in downstream river morphology resulting from changing flow patterns and volumes can lead to river bank erosion, new river courses, and resultant undermining, exposure and damage to PCR; • Accelerated flows associated with reduced sediment load can lead to impacts at the estuary and subsequent, impacts on the coast line, damaging PCR such as monuments and tombs; • Long-term sedimentation of the reservoir will cover any *in situ* archaeological sites, potentially rendering them permanently inaccessible.

Indirect Impacts

Activity or Feature	Impact
Project roads providing easier access to cultural sites	(i) Improved but *unregulated* access to PCR can lead to increased human traffic, resulting in damage and deterioration of both natural and built sites, and unacceptable exposure of sacred sites. It can also result in looting of movable artifacts (including breakage off sections of immovable monuments), and can lead to the desecration of religious sites. (ii) Improved but *regulated* access to PCR can lead to increased human traffic, resulting in positive impacts: tourism-related income-generating activities, and wider academic scholarship. (iii) In the case of road upgrading or new construction, the increased traffic volume, or new alignment, may cut off ready access to PCR, which may in turn result in inconvenience, loss of livelihood or danger for the local community, and ultimately in reduced maintenance and conservation of the PCR concerned.
Land clearing, human activities and livestock grazing around reservoir	These activities cause soil erosion, which can lead to exposure of archaeological artifacts to illegal digging and looting.
Poor drainage for run-off from project road surfaces	This can cause erosion of the adjoining land, which can lead to exposure and damage to PCR such as graves and archaeological resources;
Uncontrolled migration into, or in the vicinity of, the project	Induced development and uncontrolled migration can lead to pressure on PCR, such as vandalism, including PCR not previously identified as being subject to impact from the project.

B4: URBAN DEVELOPMENT PROJECTS

Note: Where an urban project (such as water, sanitation and sewerage, transport or construction undertaken within an urban area) incorporates activities directed towards physical cultural resources, or has any type of 'cultural heritage' component, this Annex should be read in conjunction with Annex B5.

1. Important Issues

- Unknown, buried PCR in urban areas are especially vulnerable to damage from infrastructure development such as water supply and drainage systems, sewers, and underground railways.
- The EA team must be alert to not only to obvious PCR such as historic buildings and monuments normally associated with urban areas, but also to natural PCR such as trees, and combined human-made and natural PCR such as parks, historic wells and canals.
- PCR in urban areas are especially vulnerable to adverse impacts of an indirect nature, such as those arising from abandonment, encroachment, inappropriate surroundings, intrusions in the townscape and barriers to access.
- Although infrastructure developments and new construction works in urban areas are most likely to unexpectedly encounter PCR, re-development, maintenance and rehabilitation projects in urban areas may also have impacts on PCR which are not themselves the subject of the project.
- Even where the projects is not planning to conduct works on historic buildings or within a conservation area, development activities in urban areas rich in cultural heritage may have direct negative impacts on PCR elsewhere in the city.
- Rapid population growth encouraged by from new urban developments and urban expansion projects puts both human-made and natural PCR under pressure.
- Discovery of PCR during EA investigations can contribute to an expansion of the national cultural heritage inventory, and can provide income-generating opportunities for the urban community, for example through inner-city revitalization or tourism development.

2. Typical Impacts of Urban Development on PCR during Construction

Direct Impacts

Activity or Feature	Impact
Expropriation and redevelopment of land by establishment of new urban road corridor, road realignment or widening, or peri-urban developments	(i) There may be direct destruction or damage to PCR, especially unidentified PCR, natural PCR and buried material; (ii) Positive impacts may also occur, through the discovery of hitherto unknown sites or artifacts.
Construction of new highway	A major road cutting through an urban area can: (i) Create a barrier which isolates, or otherwise Interferes with access to, and the functioning of, PCR; (ii) Create a negative visual impact by detracting from the landscape or blocking the view;
Construction of major new urban facilities, housing projects, public buildings, road alignments and major cut and fill zones in peri-urban areas	Land clearance for such facilities can directly threaten built and buried PCR in the area;
Use of construction equipment	Vibration, air and soil pollution by heavy equipment can cause damage to both built and natural PCR, and to movable artifacts such as manuscripts and works of art.
Soil compaction by heavy construction equipment	Soil compaction can damage buried material, especially archaeological sites incorporating chambers.
Accidents	Construction accidents, especially involving heavy equipment in an urban cultural heritage area, can directly damage PCR.

Indirect Impacts

Activity or Feature	Impact
Resettlement:	Resettlement of residents displaced by urban expansion schemes can lead to negative impacts on PCR: (i) The relocation of communities away from cultural sites can lead to abandonment of the sites, resulting in negative impacts. (ii) Land-clearing and civil worksin the new settlement area can have direct and indirect negative impacts on PCR.

3. Typical Impacts of Urban Development on PCR after Construction

Direct Impacts

Activity or Feature	Impact
Inadequate drainage for run-off from roads and other built surfaces	This can cause flooding which can lead to damage to built PCR, and exposure of damage to PCR such as graves and archaeological resources;
New constructions, road alignments, and major civil works	Such developments which are out of character with their surroundings can diminish the aesthetic value of the townscape, leading to decline in property values and ultimately to decline of PCR within the affected area.
Increased population arising from new developments	• Increased water and air pollution directly threatens both human-made and natural PCR; • Waste disposal or landfill in peri-urban areas can threaten natural PCR including community recreation land and buried PCR.
Increased traffic volume arising from new developments	• Vibration and air pollution can cause direct damage to both natural and built PCR; • Noise pollution can interfere with the use and enjoyment of PCR such as tourist destinations, historic buildings, religious establishments and cemeteries. • Roads and bridges which themselves constitute PCR can be damaged by increased vehicular traffic;

Indirect Impacts

Activity or Feature	Impact
Rehabilitated, improved, upgraded or new road or other urban development ultimately providing easier access to cultural sites	(i) Improved but *regulated* access to PCR can lead to increased human traffic, resulting in positive impacts: tourism-related income-generating activities, and wider academic scholarship. (ii) Improved but *unregulated* access to PCR can lead to increased human traffic, resulting in damage and deterioration of both natural and built sites, and unacceptable exposure of sacred sites. It can also result in looting of movable artifacts (including breakage off sections of immovable monuments), and can lead to the desecration of religious sites.
Increased traffic volume along major approach roads to a city	An increased volume of traffic can lead to induced development along the highway and along its tributary roads. This can lead to unregulated access to living-culture PCR and a loss of control of PCR by the local community.
Major new urban development programs	Social and demographic changes induced by major urban development programs can lead to decline and abandonment of PCR.

B5: CULTURAL HERITAGE PROJECTS, OR PROJECTS WITH CULTURAL HERITAGE COMPONENTS

1. Important Issues

- Authorities responsible for promoting and implementing cultural heritage activities often have limited knowledge of, or expertise in, other sectors, and may be unaware of the Environmental Assessment process. Projects designed to have beneficial impacts on specific PCR may thus have unplanned impacts on the social or physical environment, which may, in turn, have unintended adverse impacts on other PCR.

- Institutions and specialists with expertise and interest in one particular aspect of PCR cannot be assumed to have expertise or interest in other aspects of PCR. Projects designed by such an institution or specialist may therefore, knowingly or unknowingly, have adverse impacts on PCR which lie outside that their own scope of interest.

- The mandates of government cultural institutions such as ministries of culture often cover only monumental PCR. They are therefore frequently unaware of living-culture PCR, natural PCR or PCR of community importance. Government cultural heritage projects may thus unknowingly have significant adverse impacts on non-monumental PCR.

- Bank-funded cultural heritage projects are often focused on important PCR such as UNESCO World Heritage sites. Such sites, which are covered by international conventions, are especially vulnerable to inadvertent damage, and call for the application of precautionary measures of a high standard, which OP/BP 4.11 is designed to provide.

- Even cultural heritage projects with no physical works, such as inventorising and awareness-creation, can have unplanned but significant adverse impacts on PCR.

2. Typical Adverse Impacts of Cultural Heritage Activities on PCR

Direct Impacts

Activity or Feature	Impact
Use of heavy equipment by contractors during historic building renovation	Use of heavy equipment during the repair of historic buildings can cause compaction or collapse of buried archaeological sites.
Repair and conservation works within, or in the vicinity of, a PCR-sensitive site such as a historic urban center	Such works can have negative aesthetic or structural impacts through the use of inappropriate building materials, such as cement instead of lime, or concrete roofing tiles instead of shingles.
Infrastructure development in an urban conservation area	Excavations for urban infrastructure development are often conducted in PCR-sensitive areas, where buried PCR are likely to be unexpectedly encountered and accidentally destroyed or damaged.[3]
Accidents during construction, commissioning or operational activities	Such accidents can have adverse impacts on PCR in the vicinity, especially in high-density urban settings and conservation areas.
Projects designed to have beneficial impacts for a specialized type of PCR	Projects intended to have a beneficial impact on one type of physical cultural resource may have adverse effects on another. For example, alterations to a historic building to facilitate the accommodation of an anthropological museum would benefit the interests of anthropologists, but in doing so, may damage the historical patrimony. Equally, the renovation of a historic piazza and its conversion to a municipal park may enhance the patrimony of the city, but in doing so, may terminate use of the piazza as a traditional community meeting place.
Site management project involving provision of signs, reception kiosks and visitor centers	Signs and associated features of this type which are of unsympathetic design may constitute a visual intrusion, resulting in negative aesthetic impacts and diminishing the scenic and photographic value of the site.

Indirect Impacts

Activity or Feature	Impact
Inventorization, mapping and publishing of PCR	Projects designed to inventorize, map and publicise PCR can facilitate and encourage theft and the subsequent illegal export of movable artifacts.
PCR site management project involving change of use of historic buildings	A site management improvement project incorporating change of use of a historic building can result in an increase in the number of visitors, leading to damage through impacts such as wear and condensation.
Establishment of a historic buildings code	Projects designed to develop and implement historic buildings codes can result in the prohibition of modernization of classified buildings. This, in turn, can lead to the buildings falling vacant, resulting in deterioration and dilapidation.

[3] OP/BP 4.11 ensures that effective chance-finds procedures are implemented. See Annex I.

B6: COASTAL ZONE PROJECTS

The present Annex should be read in conjunction with Annexes B1 – B5, depending on the type of project. This Annex suggests additional *impacts that may arise by virtue of coastal zone location.*

1. Important Issues

- Coastal zones are some of the world's most historic and richly endowed areas in terms of material evidence of early and sustained human settlement. Ports, harbors and coastal settlements provided, and continue to provide, not only food and livelihoods, but also key linkages to population movements, defense, warfare and maritime trade, recreation and spiritual experience. They are thus frequently rich in cultural landscapes, archaeological, historical and other cultural resources, including houses, middens (accumulations of debris), quarries and salt works, defensive structures such as towers and forts, wharves and warehouses, historic sea defenses, land reclamation works, and evidence of ship-building such as slipways, ropeworks and shipwrecks.

- Predicting the impacts of projects in coastal zones can be quite complex. Particular attention should be paid to indirect and cumulative impacts, because:

  (i) Coastal zones are by nature environmentally dynamic and sensitive areas;
  (ii) Coastal zones in developing countries are in transition. They are coming under growing pressure from burgeoning populations and development projects competing for living space and resources.
  (iii) Being bordered on one hand by the sea and the other by the mainland, coastal zones have a limited amount of land, and a high rate of land conversion, and are therefore especially vulnerable to the cross-sectoral and cumulative impacts of the multiple developments that are increasingly found in these locations;
  (iv) Coastal zones are particularly vulnerable to impacts such as siltation and pollution from projects located some distance inland;
  (v) Coastal zone project impacts may be compounded by the growing vulnerability of coastlines to phenomena such as climate change, rising water levels and flooding.

- Due to changes in coastlines over time, previously land-based PCR may now be submerged, while underwater structures or wrecks may now be on dry land.

- The mandates of cultural institutions such as ministries of culture often cover only monumental PCR, and such institutions are sometimes unaware of coastal zone PCR, particularly community-level PCR, natural features that may have local cultural significance such as coral reefs, and underwater PCR (see below). Thus official information on coastal PCR is often scanty.

- Coastal zone projects, and particularly port projects, may affect underwater PCR such as submerged buildings, sunken vessels and their contents, and prehistoric artifacts. Such PCR may constitute national or international treasure; many countries have legislation covering

submerged heritage. In some cases, submerged PCR may fall under the ICOMOS *Convention on the Protection of Underwater Cultural Heritage*, which applies to PCR that has been lost or abandoned and is submerged for at least one hundred years. Disturbance to such PCR may have legal as well as logistical implications.

- The combined effects of natural phenomena and man-made impacts in coastal zones, including increased turbulence and increased littoral transport, can be substantial. In parts of West Africa, shoreline retreat has reached 23–30 metres/annum.[4]

- In the case of a project involving a port or adjacent areas, the port itself may constitute a PCR; even if not registered, it may be a site of historic importance.

- Discovery of PCR during coastal zone EA investigations can contribute to an expansion of the national cultural heritage inventory, and can provide income-generating opportunities for tourism development.

- Coastal PCR faces the difficulty of saline air, stray winds and intense sunlight, a combination of which can accelerate material deterioration.

- Some governments have proposed, or are preparing policies, laws or guidance on coastal zone management, usually advocating an integrated approach including PCR, and covering activities such as dredging and disposal at sea.

- Coastal zones often constitute cultural landscapes; some countries now designate stretches of coast as Heritage Coasts. For example, more than one third of the coastline of England and Wales is now so designated. In these zones, cultural heritage landscapes, nature conservation, sport, recreation, tourism, pollution and water quality issues are inter-connected.

2. Typical Adverse Impacts of Coastal Zone Projects on PCR

- For typical impacts on PCR of hydroelectric projects, roads, urban development and cultural heritage projects sited in coastal zones, Annexes B2–B5 should first be consulted. The tables in sections 2.1 and 2.2 below set out *additional* potential impacts associated with the coastal location of such projects. Care should be taken to consider potential cross-sectoral and inter-project impacts arising from the combined effects of the project concerned and other existing or planned projects in the vicinity.

- Note that many projects will involve *more than one 'project type'*. For example, urban development at the coast may include tourist hotel development, and tourism development may incorporate road construction. In addition, some projects may trigger *additional unplanned activities*. For example, tourism development may lead to urban development. Thus the potential impacts of related projects as set out in the tables should be considered.

- As noted in Section 1 above, assessment of coastal zone project impacts on PCR should take into account actual or potential impacts arising from the construction and operation of projects

[4] The World Bank, 1996, p.30.

not in the vicinity but which *may nonetheless affect coastal zone PCR*. Section 2.3 below sets out some typical impacts on coastal zone PCR arising from such projects.

- Before commencing research into PCR impacts of coastal zone projects, it should be determined whether there is a Coastal Management Plan for the area potentially affected by the proposed development.

- Many coastal areas have a long history of human settlement. Among the most important historically are the Mediterranean, India, Vietnam, the Gulf of Thailand, the east coast of Latin America, and the east and west coats of Africa.

2.1 Typical Impacts of Coastal Zone Projects during Construction — Direct and Indirect Impacts

Project Type	Project Activity of Feature	Impact on Coastal Zone PCR
Ports and Shipping, marinas, fish-farms	Dredging	Underwater human-made and natural PCR may be lost and/or destroyed.
		Use of dredged material as landfill may damage or reduce access to PCR below ground.
		Dumping dredged material at sea may damage underwater PCR.
	Land reclamation	Underground or above ground PCR may be damaged or experienced reduced access.
	Port expansion: construction works	Excavation and accidents may damage built or sub-surface PCR; existing historic structures may be demolished or be damaged through change of use, or vibration and noise from activities such as pile driving.
Tourism	Building works	Inappropriate construction and waste disposal can destroy the aesthetic value of the beach or coastal landscape.
Roads	Vibration and compression due to the use of heavy equipment	Cliffs and coastal escarpments are especially vulnerable to damage, endangering built and sub-surface PCR.
	Civil works.	Accidents may damage built or sub-surface PCR
Urban and Industrial Development	Land reclamation	Underwater human-made and natural PCR may be lost and/or destroyed by dredging; using dredged material as landfill may damage or reduce access to PCR below ground; dumping dredged material at sea may damage underwater PCR.
		Underground or above ground PCR may be damaged or experienced reduced access.
		Historic structures may be damaged by vibration and noise from activities such as pile driving.
	Mining for sand and gravel during construction	Beaches and estuaries may be used as quarries, resulting in damage and/or loss of underground PCR.
	Excavation and construction works	PCR such as culturally significant coral reefs may be quarried for building material.
		Excavation and accidents may damage built or underground

Project Type	Project Activity of Feature	Impact on Coastal Zone PCR
		PCR.
		Historic structures may be demolished or be damaged through change of use, or vibration and noise from activities such as pile driving.
		Inappropriate construction and waste disposal can destroy the aesthetic value of the beach or coastal landscape.
Cultural Heritage Actrivities	Renovation works	Use of inappropriate building materials, and employment of contractors unfamiliar with coastal zone work can be damaging to PCR.

2.2 Typical Impacts of Coastal Zone projects during Project Operations — Direct and Indirect Impacts

Project Type	Project Activity of Feature	Impact on Coastal Zone PCR
Ports and Shipping, marinas, fish-farms	Increased volume of marine traffic	Increased turbidity and coastal erosion may result in damage to (i) natural marine PCR such as culturally significant coral reefs, and (ii) built or natural PCR on coastline.
		Increased debris and dumping of waste may (i) cover or damage underwater PCR; (ii) despoil beaches, reducing the aesthetic value of the site and the coastal landscape.
	Creation of deeper waters	Ships of deeper draught may foul submerged PCR.
		Changed coastal current patterns may dislodge or damage submerged PCR.
		Increased tidal flows and storm surges resulting from deeper waters may cause coastal erosion and resultant damage or loss of natural or built coastline PCR.
Tourism	Increased tourist traffic	Beachcombers may remove trophies, natural artifacts and fossils constituting movable PCR.
		Tourist interest in buying movable PCR may lead to organized theft and sale.
		Due to the typically narrow confines of coastal zones, mass tourism can rapidly exceed the carrying capacity of coastal PCR sites, with consequent negative impacts.
	Coastal building	Inappropriate developments can destroy the aesthetic value of the beach or coastal landscape.
Roads	Increased traffic	Coastal highways can reduce or cut off access by local communities to culturally significant beach sites.
Urban and Industrial Development	Coastline modification including the building of levées	Changed coastal current patterns may dislodge or damage built or underwater PCR.
		Coastline modification activities may destroy or reduce the effectiveness of natural buffer zones such as wetlands, leading in

Project Type	Project Activity of Feature	Impact on Coastal Zone PCR
		turn to exposure of PCR to damage or destruction.
	Induced development	Unplanned development along coastline may provide increased access to destruction and/or theft of movable or breakable PCR
	Coastal building	Inappropriate developments can destroy the aesthetic value of the beach or coastal landscape.
Agriculture (including irrigated agriculture), forestry and aquaculture	Coastal agriculture and deforestation	Sedimentation of coastal lagoons may cover or destroy submerged PCR, and may kill coral reef life, resulting in destruction of culturally significant coral reefs, and subsequent increased coastal erosion.
	Clearing or inadvertent destruction of mangroves	Mangroves may themselves be culturally significant, and their depletion may also reduce the supply of traditional source of materials for the maintenance and repair of historic buildings.
Cultural heritage Activities	Increased tourist traffic	Due to the typically narrow confines of coastal zones, opening PCR to tourist access can rapidly exceed the carrying capacity of coastal PCR sites, with consequent negative impacts.

2.3 Typical Impacts on Coastal Zone PCR of Projects outside the Coastal Zone

Project Type	Project Activity of Feature	Impact on Coastal Zone PCR
Hydro/Irrigation Dams	Increased river flows associated with upstream dam releases and reduced sediment loads	Accelerated flows in estuary may destroy barrier reefs, thereby increasing tidal flows and storm surges, which in turn may cause increased coastal erosion and resultant damage or loss of (i) sub-surface PCR, or (ii) Built or natural PCR on the coastline.
		Reduced sediment load may lead to (i) accelerated natural coastal erosion, posing a danger to built PCR, or (ii) sand deficits, which may lead to the scouring of river beds and beaches for building sand, thereby posing a danger to coastal PCR.
Urban and Industrial Development	Mining for sand and gravel during construction	Beaches and estuaries may be used as quarries, resulting in damage or loss of sub-surface PCR, and erosion, resulting in further damage to coastal PCR.

ANNEX C

GUIDANCE FOR DOCUMENT PREPARATION

C1 A Category 'A' EA: Guidelines for the TOR of the PCR Component
C2 Archaeological 'Survey and Salvage' Work during Project Implementation — Specimen TOR
C3 chance finds Procedures
C4 Archaeological Research — Administrative Issues

C1: CATEGORY 'A' EA:

GUIDELINES FOR THE TOR OF THE PCR COMPONENT

The Terms of Reference (TOR) for an EA generally consists of the following sections. The text under each heading sets out the general purpose of the section;[1] the *italicized* text addresses Physical Cultural Resources (PCR) issues to which attention should be drawn.

1. Introduction

This Section states the purpose of the TOR, and describes the project to be assessed.

2. Background Information

This Section describes the major components of the project, the need for it, the identity of the project sponsors, a brief history of the project, its current status and timetable, identities of any associated projects, and a summary description of the environmental setting. Alternative project schemes considered should also be mentioned.

The description of the environmental setting should include mention of any human settlement associated with the region in which the project is located, and socio-cultural characteristics of the present and past communities in the vicinity.

3. Objectives of the EA

This Section summarizes the general scope of the EA related to the screening category,[2] and discusses the timing in relation to project preparation, design and execution.

The TOR should mention PCR in the list of impacts to be covered, together with other biophysical and social impacts.

4. Regulatory Environment

This Section identifies any regulations and guidelines which will govern the conduct of the assessment or specify the contents of its report and to which the Consultant's attention should be drawn. It may include, for example:

- World Bank Operational Policies such as OP 4.01, Environmental Assessment;
- National or provincial laws on EA or EIA;
- EA regulations of other financing agents involved in the project.

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1 More detailed guidance is provided in the World Bank *EA Sourcebook* Volume I, 1991.

2 The screening category, and the justification for it, will appear in the Integrated Safeguards Data Sheet (ISDS).

The list should include reference to the World Bank Physical Cultural Resources safeguard policy OP 4.11, and should draw the Consultant's attention to the need to identify national legislation and guidelines which may relate to PCR , such as national antiquities laws or regulations, and to requirements regarding the safeguarding of cultural heritage under international conventions.

5. Likely Major Issues

This Section summarizes the outcome of the Scoping exercise, in which a broad assessment will have been made of the major biophysical and social impacts likely to be associated with the project.

Typically, this Section might include a statement such as, "The Consultants are required to consider all types of physical cultural resources, but particular attention should be paid to the possibility of (for example) unregistered archaeological sites in the reservoir area, local cemeteries and sacred trees in the vicinity of the settlements". These issues will inform the specializations to be considered for inclusion on the consulting team.

6. Scope of Work to be Carried Out

6.1 Description of the Project

The Consultants should provide a brief description of the project using maps where necessary, and including location, general layout, size, capacity, activities at pre-construction, construction, commissioning and operations phases, staffing and support, facilities and services, and life span of the project.

Where there is a possibility of impacts on areas of aesthetic value or protected areas, such as tourist beauty spots or game parks, the TOR should also require the Consultants to include in the EA report a description or illustrations of the physical appearance of the project during the various phases. Where the project may affect culturally sensitive areas, the Consultants should include a description of where labor camps will be situated, and how they will be organized.

6.2 Baseline

The Consultants should provide baseline data on the biophysical, and social environment potentially affected by the project (see World Bank EA Sourcebook Volume I, Annex 1–3). The spatial and temporal baseline boundaries should ideally have been identified in the Scoping exercise; otherwise, the Consultants should be requested to identify them.

The Consultant should be reminded that impacts on all types of PCR should be considered, ie both natural and human-made, registered and unregistered, movable and immovable.

Note that different aspects of the project give rise to different types of impact. For example, the baseline boundaries for air pollution may be different from those for inundation of archaeological sites, and these, in turn, may be different from the baseline area for impacts on movable objects in churches which may be opened up to public access as a result of the construction of a new access road. Thus each type of PCR may have different baseline boundaries, and the TOR should require the Consultant to identify these.

The TOR should require the Consultants to include photographs of the potentially affected PCR areas, sites and objects wherever possible.[3]

Note that if the principal PCR impacts and impact areas have not already been identified at 'Scoping' stage, the Consultants should be required to include a 'Scoping' in their bid proposal, or in the Inception Report.

6.3 Legislative and Regulatory Considerations

The Consultant should provide the pertinent regulations and standards pertaining to the EA.

Note that although the basic EA-related regulations may have been included in Section 4 of the TOR (above), this is unlikely to be sufficient for the PCR component. Thus the TOR should require the Consultants to identify national commitments to international PCR conventions (see this Guidebook, Annex J), and to identify any UNESCO or other internationally or nationally recognized sites in the vicinity of, or potentially affected by the project, whether such impact is likely to be direct or indirect. National or provincial regulations or EA/EIA guidelines concerning antiquities, archaeology and other PCR-related issues should also be identified, including any legislation concerning the management of chance finds.

6.4 Impact Assessment

In this analysis, the Consultant is required to identify the likely biophysical and social impacts in sufficient detail to be able to design suitable mitigating measures (see 6.6 below).

The TOR should remind the Consultant that impacts on all types of PCR should be considered, ie both natural and human-made, registered and unregistered, movable and immovable. Reference should be made to this Guidebook.

6.5 Analysis of Alternatives

The TOR should require the Consultants to include PCR aspects when considering alternative projects or project locations.

6.6 Environmental Management Plan (EMP)

The TOR should state that mitigating measures arising from PCR impacts should be agreed to by the concerned and affected parties before they are submitted as recommendations in the EMP.

6.7 Institutional Needs for Implementing, and Monitoring the Implementation of, the EMP

The TOR should request the Consultants to make recommendations concerning any capacity needs of the concerned institutions to perform the necessary tasks, and measures which may be required to improve liaison between those institutions and other authorities such as the project proponent and the authority responsible for EA/EIA.

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[3] Note that in some cases, full disclosure is not recommended. See this Guidebook, Sections 1.12 and 4.10.

6.8. Public Participation

The TOR should point out the importance of the consultative process for the physical cultural resources component.

7. Reporting

The investigations and findings with respect to PCR should form an integrated part of the EA report. OP 4.11 does not call for a separate report.

8. EA Team

The findings of the Scoping exercise should inform this Section. If there are any major PCR impacts expected, or if the project has PCR-related components, or is a 'cultural heritage' project, or is located within, or in the vicinity o,f a recognized PCR site, the TOR should require the EA team to include specialist(s) in the field(s) concerned, such as, for example, a cultural anthropologist, an archaeologist or a conservation architect, depending on the nature of the PCR issues (see this Guidebook, Section 4.3). Even if there are no major PCR impacts expected, and none of the other above conditions apply, the TOR should nonetheless require the EA team to include a team member qualified and responsible for the PCR component.

9. Other Information

If major PCR impacts are expected, or if the project is located in the vicinity of a nationally or internationally recognized PCR site, or if the project has a cultural heritage – related component, the TOR should draw the attention of the Consultants to relevant publications and information sources, including the World Bank *PCR Country Profile*, if one has been produced for the country concerned.

C2: ARCHAEOLOGICAL 'SURVEY AND SALVAGE' WORK DURING PROJECT IMPLEMENTATION

SPECIMEN TOR

The following sample Terms of Reference (TOR) relates to survey and salvage work to be conducted *during the implementation phase* of a hydroelectric project. Normally such survey work would normally be conducted as part of the EA, before the loan is approved. However, in this case, initial construction work on the dam had begun several years before the Bank got involved. The Electricity Authority had commissioned an EA several years previously. It covered visible PCR in the areas potentially affected, and developed mitigating measures that had been implemented, but the possibility of archaeological sites within the project area was overlooked. The EA was approved, but it was later realized that a more thorough survey should have been conducted.

Following some archaeological discoveries made near the dam site by a team conducting preliminary research, it was agreed by the Electricity Authority, the Ministry of Culture and the World Bank that: (i) An archaeological survey of the reservoir and power station areas should be conducted before inundation, and (ii) The survey should include impact assessment and the removal of any important artifacts which might be found. As inundation was to commence after a few months, there was an element of urgency.

Specimen TOR	Explanatory Notes
1. Background	
In 1998, the World Bank approved a development loan (Credit No. ....) to the Government of ..... to upgrade and complete the design of a dam commenced earlier on the .... River. The final design of the project includes a 40-metre high rockfill dam, a 95 sq km reservoir, a 300 metre diversion tunnel, an underground power house and a power plant with a generating capacity of 200 MW. Construction of the dam is underway; it is expected that it will be completed before March 2004.	*The Background should cover a description of the project.*
As part of project preparation, an EA was conducted. The EA reported on visible features of historical and other cultural importance in the areas affected by the project. However, the EA did not include the determination of the possible presence of archaeological sites.	*The Background should include information relating to any previous activities, findings or reports relating EA, and especially to physical cultural resources which may have been considered, or not considered, prior to the proposed survey.*
During a preliminary investigation in January 2001, archaeologists from the Ministry of Culture discovered stone artifacts and pottery in	

the vicinity of the dam site, and recommended a comprehensive study of the reservoir and power station areas.

2. Objective

The objective of the proposed survey is to investigate, report upon and make recommendations concerning archaeological resources which may be impacted by the inundation of the reservoir of the Yerer hydroelectric Project, and by the power station, so as to avoid or mitigate such impacts.

Note that only the reservoir area and power station are to be covered. Typically, the dam site would also be covered, but in this case, the foundations of the dam have already been laid.

3. Scope of Work

The scope of work of the assignment is as follows:

The survey will be conducted in such a manner and within such a timetable as to ensure that the survey fieldwork will not create an obstacle to the timely implementation of the project.

The contract TOR should normally include a clause ensuring that the proposed work will not cause any delay in project implementation.

The survey will be confined to the reservoir area as indicated by the Maximum Water Line at 2,063 m above sea level.

While important archaeological resources known, or discovered to be located near the site should be noted for possible future research by other parties such as the Ministry of Culture, the proposed survey itself must be limited to a clearly defined area.

The Consultant shall conduct the work in four phases:

- Phase I: A systematic foot survey of the power station area and all topographic/ vegetation zones encompassed with the reservoir area. Shovel test pits are to be dug at sites of potential significance;
- Phase II: Excavations of those sites found to be of potential significance based upon Phase I fieldwork;
- Phase III: Major excavations of the most significant sites chosen on the basis of Phase II investigations;
- Phase IV: Analysis and write-up of final report.

It is essential to delineate the work to be undertaken in clearly identifiable phases, to facilitate monitoring and timely completion of the assignment.

In some cases, where the necessary equipment is available, other techniques such as non-invasive survey work may be possible.

The Consultant will undertake site visits and surveys in such a manner as to ensure

This particular survey is limited to archaeological resources. However,

fulfillment of the requirements of the assignment.

The consulting team will record, report upon and make recommendations concerning any cultural heritage resources of a non-archaeological nature which may come to its notice during the conduct of the study.

All data will be analysed by the Consultant in the field or in the laboratory. Findings will be tied to a master GIS grid.

Wherever possible, mitigating measures such as the removal of important objects should be conducted within the ambit of the survey. In the event that any additional mitigating measures are likely to be required, these will be notified to the Electricity Company as soon as possible so as to minimize likely impact on the implementation schedule of the project.

physical cultural resources such as modern graves or sacred trees which may be encountered should also be reported.

4. Timetable

In order to allow for completion of the survey within the specified deadline (see below), the survey work should commence no later than 15 January 2004.

The Electricity Company plans that inundation will commence in June 2004, with the onset of the monsoon. This plan will provide for a March 2004 commissioning date, and will require the survey team to complete its field work by 15 June 2004. In any case, the team, its vehicles and all equipment should be clear of the reservoir area by the close of day, 19th June.

Neither archaeological survey work nor mitigating measures should be planned for after the 2004 rainy season, as the reservoir is expected to be filled by the end of the monsoon in September 2004.

Since the project site forms part of a construction site, and in this case will be subject to inundation, it is important to set definite time boundaries on commencement and completion of the survey work and evacuation of the site. These dates should be agreed with the project construction and management offices, and should take into account the weather pattern as well as project commissioning requirements.

5. Reporting

Findings which may impact in any way upon the implementation schedule of the project will be reported by the Consultant to the Electricity Company as soon as such information becomes available, without waiting for a formal reporting date.

Since the nature of the proposed survey is investigation of the unknown, the outcome will always retain an element of unpredictability, which is very difficult and expensive for contractors to manage. Thus in order to maintain a good working

relationship between the contractor, the Consultant and the Electricity Company, every effort must be made to report any find which could affect the implementation timetable, as soon as possible.

Inception Report

The Consultant will submit a brief Inception Report within two weeks of commencement of fieldwork. It will report on the mobilization of the team, the situation on site and any matter which has come to light which may affect, or cause a change in, the planned execution of the survey.

Given the importance of staying on schedule (see above), the Consultant must keep the Electricity Company fully informed about anything likely to alter the plan.

6. Progress Report

At the end of March 2004, the Consultant will submit a brief progress report on its work and findings to date, focusing especially on any recommended measures which may require action prior to inundation, together with their estimated costs.

Whereas in an EA, the mitigating measures are not usually costed until the Environmental Management Plan is written, in this case, the mitigating measures will have to be taken while the investigations are going on, so as not to delay the completion date. Thus any unanticipated expenses will have to be reported well before the target completion date.

7. Interim Report

By 15th June 2004, the Consultant will submit an Interim Report, consisting of a Management Report followed by sections on (but not necessarily be limited to) Work Carried Out, Results, Conclusions and Mitigating Measures Implemented.

Note that the Interim Report will be issued upon completion of the on-site survey work and implementation of the mitigating measures. So far as the project proponents are concerned, the Inception Report is the critical report. The Final Report will contain the results of the technical analysis of the objects removed and studied, but will be produced after the survey team has left the site (see below).

The Management Report must be written in non-technical language. It will include:

- A brief summary of the work carried out, noting and explaining any variations from plan;
- A clear statement in layman's language of the significance of the findings, both in the national and international context, based upon the fieldwork, while

recognizing that prior to laboratory analysis, this assessment will be only provisional;

- Confirmation that any objects deemed important enough to be salvaged have been removed from site in order for inundation to proceed as planned;
- A report on any further recommended actions or related matters which might have any bearing on the future implementation of the project.

8. Final Report

The Consultant will submit a Final Report by 15th December 2004. This report will encompass most of the material in the Interim Report, together with the results of the technical analysis and any modifications required to the findings and conclusions.

The final report will be produced after the analysis of the results has been completed, but any delay should not affect the implementation of the project.

9. Publication

Any publication of the results of this survey will be carried out in liaison with, and only with the agreement of, the Ministry of Culture and the Electricity Company.

The question of rights to publish is often a sensitive issue; whatever is decided upon must be agreed beforehand with all parties concerned.

10. Qualifications

The consulting team conducting the Survey and Salvage work must consist of qualified archaeologists recognized by the national authorities of the country in which the work is to be conducted, and licensed to work in that country.

The lead archaeologist should have experience in the region in which the project impact area lies. In the event that the team is led by an international consultant, it is expected that the team will consist of both international and local archaeologists.

C3: CHANCE FINDS PROCEDURES

Contracts for civil works involving excavations should normally incorporate procedures for dealing with situations in which buried PCR are unexpectedly encountered. The final form of these procedures will depend upon the local regulatory environment, including any chance find procedures already incorporated in legislation dealing with antiquities or archaeology.

Note: The case for which the general guidance below is provided applies where there will be an archaeologist on call. In exceptional situations in which excavations are being carried out within PCR-rich areas such as a UNESCO World Heritage site, there will often be an archaeologist on site to monitor the excavations and make decisions on-site. Such cases would require a modified version of these procedures, to be agreed with the cultural authorities.

Chance finds procedures commonly contain the following elements:

1. PCR Definition

This section should define the types of PCR covered by the procedures. In some cases the Chance finds procedure is confined to archaeological finds; more commonly it covers all types of PCR. In the absence of any other definition from the local cultural authorities, the following definition could be used: "movable or immovable objects, sites, structures or groups of structures having archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance".

2. Ownership

This paragraph should state the identity of the owner of the artifacts found. Depending on the circumstances, the owner could typically be, for example, the state, the government, a religious institution, the land owner, or could be left for later determination by the concerned authorities.

3. Recognition

This is the most difficult aspect to cover. As noted above, in PCR-sensitive areas, the procedure may require the contractor to be accompanied by a specialist. In other cases, the procedures may not specify how the contractor will recognize a PCR, and a clause may be requested by the contractor disclaiming liability.

4. Procedure upon Discovery

Suspension of Work

This paragraph may state that if a PCR comes to light during the execution of the works, the contractor shall stop the works. However, it should specify whether *all works* should be stopped, or only the works immediately involved in the discovery, or, in some cases where large buried structures may be expected, all works may be stopped within a specified distance (for example, 50 metres) of the discovery. This issue should be informed by a qualified archaeologist.

After stopping work, the contractor must immediately report the discovery to the Resident Engineer.

The contractor may not be entitled to claim compensation for work suspension during this period.

The Resident Engineer may be entitled to suspend work and to request from the contractor some excavations at the contractor's expense if he thinks that a discovery was made and not reported.

Demarcation of the Discovery Site

With the approval of the Resident Engineer, the contractor is then required to temporarily demarcate, and limit access to, the site.

Non-Suspension of Work

The procedure may empower the Resident Engineer to decide whether the PCR can be removed and for the work to continue, for example in cases where the find is one coin.

Chance Find Report

The contractor should then, at the request of the Resident Engineer, and within a specified time period, make a *Chance Find Report*, recording:

- Date and time of discovery;
- Location of the discovery;
- Description of the PCR;
- Estimated weight and dimensions of the PCR;
- Temporary protection implemented.

The *Chance Find Report* should be submitted to the Resident Engineer, and other concerned parties as agreed with the cultural authority, and in accordance with national legislation.

The Resident Engineer, or other party as agreed, is required to inform the cultural authority accordingly.

Arrival and Actions of Cultural Authority

The cultural authority undertakes to ensure that a representative will arrive at the discovery site within an agreed time such as 24 hours, and determine the action to be taken. Such actions may include, but not be limited to:

- Removal of PCR deemed to be of significance;
- Execution of further excavation within a specified distance of the discovery point;
- Extension or reduction of the area demarcated by the contractor.

These actions should be taken within a specified period, for example, 7 days.

The contractor may or may not be entitled to claim compensation for work suspension during this period.

If the cultural authority fails to arrive within the stipulated period (for example, 24 hours), the Resident Engineer may have the authority to extend the period by a further stipulated time.

If the cultural authority fails to arrive after the extension period, the Resident Engineer may have the authority to instruct the contractor to remove the PCR or undertake other mitigating measures and resume work. Such additional works can be charged to the contract. However, the contractor may not be entitled to claim compensation for work suspension during this period.

Further Suspension of Work

During this 7-day period, the Cultural authority may be entitled to request the temporary suspension of the work at or in the vicinity of the discovery site for an additional period of up to, for example, 30 days.

The contractor may, or may not be, entitled to claim compensation for work suspension during this period.

However, the contractor will be entitled to establish an agreement with the cultural authority for additional services or resources during this further period under a separate contract with the cultural authority.

C4: ARCHAEOLOGICAL RESEARCH

ADMINISTRATIVE ISSUES

Archaeology is a common component in EA, particularly in projects permanently impacting large areas such as those involving highways, dams and reservoirs. When archaeologists are (i) employed on the EA team, (ii) working on a stand-alone PCR survey, or (iii) engaged in a 'survey and salvage' contract during project implementation, there may be administrative issues to be addressed, depending on the legislation and procedures of the country concerned, which should of course be consulted before agreements are entered into.

One issue is the question of archaeology permits.

Case (i): Employment in the EA Team:

In this case the field work is generally confined to ground surveys, and this is usually accepted within the EA permit, if such a permit is required.

Case (ii): Employment in a Stand-alone PCR Survey:

In this case, archaeologists may require archaeology permits to conduct *any* survey work.

Case (iii): Archaeological Survey and Salvage (usually conducted only if the project is definitely going ahead, or if implementation has already commenced):

In this case, the work will usually require an archaeological permit.

Archaeological permits are not always easy to obtain. Furthermore, the authorities issuing them are often unfamiliar with EA and the project development cycle. Typical difficulties are:

- The authorities are often very selective about who they are willing to authorize to undertake such work;
- There may be no contract archaeology in the borrower country;
- The authorities may insist upon doing the work themselves, which can be difficult to arrange, as funds from Bank loan cannot be used to pay government staff.

During the conduct of an EA, any archaeologists on the team are normally sub-contractors to the firm taking overall responsibility for the EA contract, and their rights are limited by law to those of a sub-contractor. However, in the case of an independent archaeological survey, the archaeological team is typically the prime contractor, and may presume the principles applicable to academic archaeology, where:

The objective is basically research;

(i) The time available runs into years rather than months;
(ii) The archaeologist has certain traditional rights to the information and discoveries made;
(iii) The contractor is expected — or even obliged, by the national laws relating to archaeology — to publish his findings;[4]
(iv) Publication is traditionally financed by the patron.

It is thus important that where significant archaeological investigations are going to be conducted, the relevant national laws and regulations, and professional code of conduct, should be studied and their implications discussed and agreed by all concerned before the contract is finalized.

Procurement Issues

There may be some difficulties in applying competitive bidding procedures for archaeological work, such as:

- The absence in most developing countries of a contract archaeology sector;
- A reluctance on the part of potential bidders (often foreign academic institutions) to submit proposals, especially where there are no prospects of long-time site research;
- Because contract archaeology is more common in developed countries, competitive bidding usually means bringing in foreign institutions. In such cases, resentment may be felt by local archaeologists, who would usually expect to obtain such archaeological assignments, through the government archaeology authority;
- In order to avoid potential conflict of interest, consulting contracts for project implementation cannot normally be awarded to firms who participated in project preparation. However, in the archaeology profession, particularly in developing countries where there is no contract archaeology, the reverse is the case. Archaeologists tend to see their work as a continuum. An archaeological site becomes associated with a specific archaeological team, thereby becoming something of an institution. Thus the granting of a permit to an archaeologist to work on a site previously licensed to another archaeologist, far from being seen as a reasonable precaution, may be regarded as improper.

Thus the approach to be adopted for commissioning stand-alone archaeological investigations should be discussed in detail with a procurement specialist, in order to find a workable solution to the contracting arrangements.

4 Note, for example, that the *Principles of Conduct of the European Association of Archaeologists* for archaeologists involved in contract archaeology include the provision: "Archaeologists involved in contract archaeological work should ensure that the results of such work are properly completed and made publicly available".

ANNEX D: IMPORTANT REFERENCE MATERIALS

D.1 World Bank PCR Country Profiles
D.2 International PCR Conventions and Lists of PCR
D.3 Bibliography

D1: WORLD BANK PCR COUNTRY PROFILES

Task Team members, borrowers and even EA teams are often unfamiliar with the PCR of client countries, with the provisions for protecting and managing these resources, or with the expertise available in the various disciplines related to PCR. In addition, unlike other aspects of EA such as flora, fauna, water resources and human settlement, the nature and occurrence of PCR throughout the country is often not well documented, and seldom mapped. Furthermore, cultural authorities are often unfamiliar with the project development cycle, and may be altogether unaware of EA and the national laws and regulations defining the EA process, despite the fact that in most countries, EA is required by law to cover cultural heritage.

In order to help close this information and communication gap, the Bank is developing *PCR Country Profiles* for each of its borrower countries. These Profiles are designed, *inter alia*, to help Task Team members, borrowers and EA consultants to implement the PCR safeguard policy.

The Profiles are available on a dedicated internal World Bank website that may be accessed by typing: **esd/pcr** or **http://esd.worldbank.org/pcr** in the address box at the top of the Bank's internal Web Home Page.

The Home Page for the site provides an introduction to the Profiles, and a box at top-left for accessing the Profile of a specific country.

The 'Full Display' option on the menu at the left of the Profile allows for printing a paper copy of the Profile.

Hitting the small circle with an '**i**' to the right of entries on the Profile gives the source and date of the information in the entry.

Each profile contains a map of the country, followed by:

1. Geographical, Historical and Socio-cultural Notes
2. Types of Physical Cultural Resources found in the country
3. Internationally Recognized Cultural Sites
4. Institutions: Cultural and Environmental
5. National Laws and Regulations: Cultural and Environmental
6. International or Regional Conventions: Cultural and Environmental
7. Inventories of Physical Cultural Resources
8. Geospatial Data and Maps
9. Sources of Information and Expertise: Individuals and Firms
10. Recent Developments regarding Cultural Resources
11. Management Capacity for Physical Cultural Resources

The contains basic data and a national map, as in the example shown overleaf.

World Bank Group WB Intranet He

Physical Cultural Resources Country Profile

Ethiopia

Go!

Ethiopia

Geography, History, Socio-cultural Profile

Types of Physical Cultural Resources

Internationally Recognized Sites

Institutions

Regulations

Conventions

Inventories

Geospatial Data and Maps

Experts

Developments

Management Capacity

Full Display

Home

Admin Home

Ethiopia

Name in National Language : Ityop'iya

WB Region: Africa

Population : 65,816,048 (2001)

Area (sq km) : 1,000,000

Urban Rural Pct : 16:84

WB Poverty Index: 81.9%

Income per capita : US$ 100

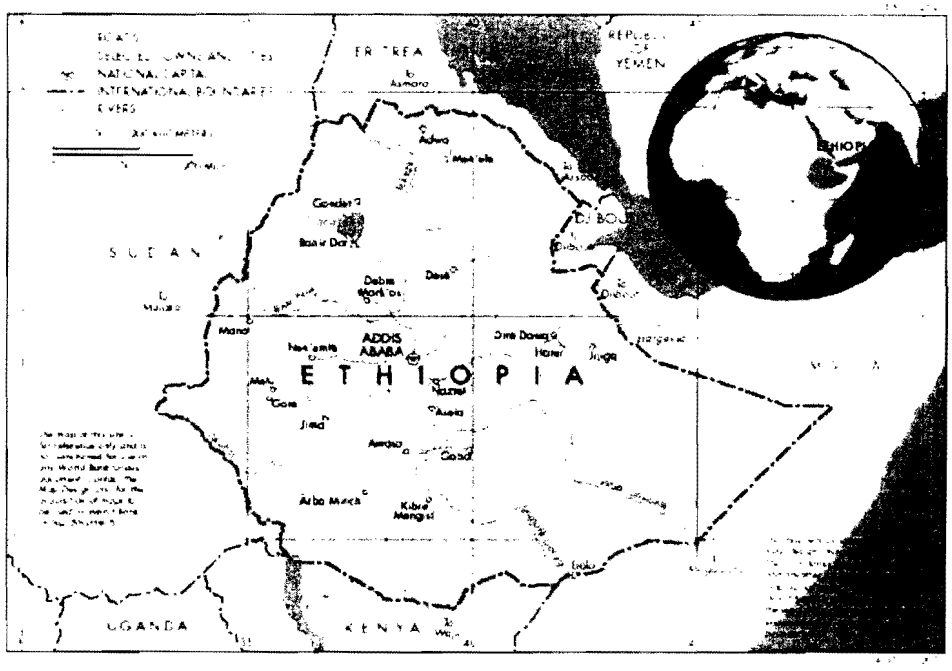
Official Language: Amharic

Other Languages : Tigrinya, Arabic, Orominya, Guaraginya, English, Somali, other local languages

Religions : Muslim 45%, Ethiopian Orthodox Christian 45%, Protestant 5%, animist 5%

Unesco Member State? : Yes

Source: World Development Indicators, 2003



Frequent reference to the Profiles is made throughout the guidance provided in the present Guidebook, for each of these Sections listed, accessed by clicking one of the headings in the box to the left, provides information useful at each stage of the project cycle.

The information provided is practical and intended for the lay-person. It covers not only data on what type of PCR, if any, might be encountered during project construction and operations, but includes names of institutions and individuals who may be in a position to assist, with contact details.

The extract below illustrates the sort of data available data in the 'Geospatial Data and Maps' Section.

Geospatial Data and Maps

The use of geospatial techniques and data by authorities responsible for Physical Cultural Resources varies widely among countries. In many cases, remote sensing data and GIS exist, but do not include Physical Cultural Resources and are unknown to those responsible for these resources. Nonetheless, such information may be valuable for surveying areas impacted by development projects. Sources of geospatial data and maps, which should be consulted before Physical Cultural Resources surveys are commenced, are provided below. Scroll down the page to find the following categories. Topographical Maps; Aerial Photos; Remote Sensing Data; GIS; Mapping of Physical Cultural Resources Sites; and Tourism Maps, Plans, Guides.

Aerial Photos

Ethiopian Mapping Authority (EMA)
Ato Hadgu Medhin, General Manager Services: survey maps, aerial photography, digital mapping, remote sensing Emperor Menelik II Avenue Addis Ababa, Ethiopia Tel: 251-1-518-445 or 251-1- 515-901Fax:251-1-515-189 Email: ema@telecom.net.et www.telecom.net.et/~ema/ema.htm

GIS

EMA Ministry of Water Resources
Ato Shiferaw Jarso Tel: 251-1/ 18 53 39

Mapping of Physical Cultural Resources Sites

Ministry of Information and Culture (ARCCH)
Ato Jara Haile Maryam, General Manager Ato Solomon, Deputy General Manager Addis Ababa Tel: 157630 or 09 208121 Fax: 510 705

Under 'Laws and Regulations' Sections will be found the legislative framework relevant to PCR in the development process.

Cultural Heritage or Antiquities Laws and Regulations

Antiquities Proclamation No. 229, 1966

Antiquities Proclamation No. 36, 1989 to provide for the study and protection of antiquities

Research and Conservation of Cultural Heritage Proclamation No. 209, 2000

EIA Regulations and Guidelines Pertaining to Physical Cultural Resources

Federal Democratic Republic of Ethiopia, Environmental Impact Assessment Proclamation No. 299, Addis Ababa, 2002

Federal Democratic Republic of Ethiopia, Environmental Protection Authority, Final Draft: Environmental Impact Assessment Guideline Document, Addis Ababa, July 2000

The 'Institutions' section provides important contact data:

National Authorities

Name & Address	Officials
Cultural Heritage Authority	
Authority for Research and Conservation of Cultural Heritage, Ministry of Information and Culture Deputy General Manager: Ato Solomon Addis Ababa Tel: 157630 or 09208121 Fax: 510705	General Manager: Ato Jara Haile Maryam

D2: INTERNATIONAL PCR CONVENTIONS AND LISTS OF PCR

The following conventions, recommendations and lists are especially relevant to the question of safeguarding physical cultural resources. Details can be found on the relevant website.

UNESCO Conventions and Lists

- Convention concerning the Protection of World Cultural and Natural Heritage
- List of World Heritage Sites
- World Heritage Sites Tentative List
- Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property

UNESCO Recommendations

- Recommendation concerning the Preservation and Protection of Cultural Property Endangered by Public Works
- Recommendation concerning the Protection, at National Level, of the Cultural and Natural Heritage
- Recommendation concerning the Safeguarding of the Beauty and Character of Landscapes and Sites
- Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas
- Recommendation for the Protection of Movable Cultural Property
- Recommendation on International Principles Applicable to Archaeological Excavations

Other Conventions and Lists

- Burra Charter for the Conservation of Places of Cultural Significance
- European Convention on the Protection of the Archaeological Heritage
- EEC: Third ACP-EEC Convention: Articles 1,10,127 (Articles directly addressing cultural issues)
- World Monuments Fund: World Monuments Watch - 100 Most Endangered List

- The *Europa Nostra* Declaration on Coastal Culture

ICOMOS Charters

- International Charter for the Conservation and Restoration of Monuments and Sites (*The Venice Charter*)
- The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (*The Burra Charter* — internationally recognized)
- The Florence Charter (*Historic gardens and landscapes*)
- Charter on the Conservation of Historic Towns and Urban Areas
- Charter for the Protection and Management of The Archaeological Heritage
- Charter for the Protection and Management of Underwater Cultural Heritage
- International Charter on Cultural Tourism
- Principles for the Preservation of Historic Timber Structures
- Charter on the Built Vernacular Heritage

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