

**ANNEX 7A: ENVIRONMENT ASSESSMENT AND ENVIRONMENT MANAGEMENT PLAN (EA-EMP)****Table of Contents**

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**LIST OF ACRONYMS**

SLC	Social Land Concession
NGO	Non-Governmental Organization
LASED	Land Allocation for Social and Economic Development Project
EMP	Environmental Management Plan
EA	Environmental Assessment
JSDF	Japan Social Development Fund
AEA	Agro Ecosystem Analysis
C/S	Commune/Sangkat
C/S PIM	Commune/Sangkat Project Implementation Plan
NCDDS	National Committee for Sub-National Democratic Development Secretariat

**1. PROJECT DEVELOPMENT OBJECTIVE**

The project development objective (PDO) is to help improve the target beneficiaries’ access to agriculture resources and selected infrastructure and social services in project communities.

## 2. PROJECT DESCRIPTION

The target beneficiaries are some 5,141 families in the project communities in rural areas who previously were landless or land-poor population groups. The project would cover a total of 14 SLC sites in the five provinces of Kratie, Tbong Khmum (formerly part of Kampong Cham), Kampong Thom, Kampong Chhnang and Kampong Speu. These sites include the eight (8) sites under the LASED Project, five<sup>1</sup> (5) sites in projects funded under the Bank-administered Japan Social Development Fund (JSDF) and one (1) new site in Kampong Thom Province. The total area to be covered is approximately 17,000 hectares, benefitting some 5,141 families. The project would make specific provisions to support vulnerable households and would give particular attention to livelihood activities and particularly those that benefit women. The activities financed under the project would continue to utilize the inclusive consultation process established under the LASED Project to identify and meet the needs of targeted households. In addition, the population living outside the SLC sites would benefit as they would have access to the project’s public infrastructure (rural and agriculture roads, access tracks, schools and health posts), education and health services, and improved agricultural technology.

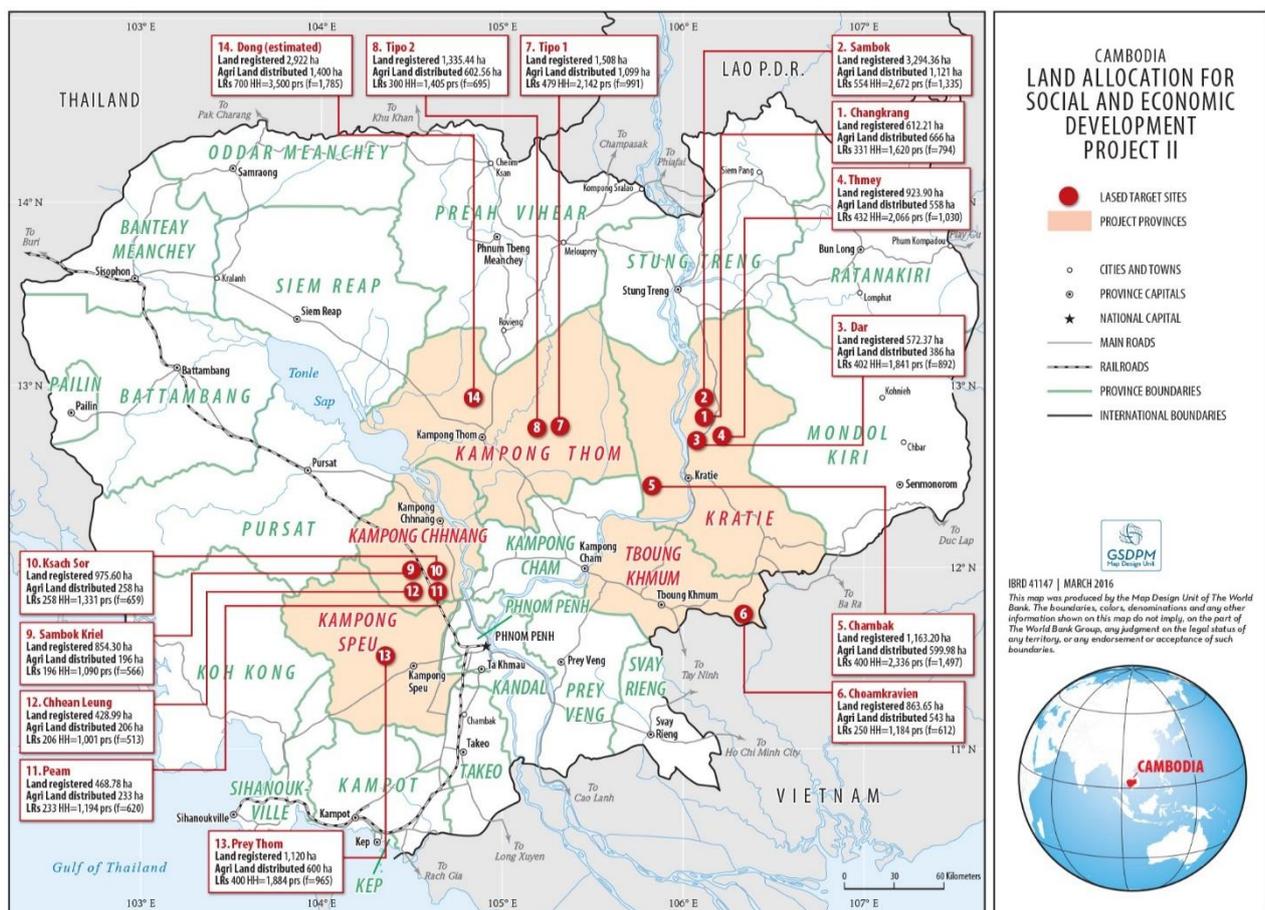


Figure 1. Map of SLC sites in the five provinces  
Source: LASED II’s PAD, 2016

<sup>1</sup> A peri-urban site in Battambang, which was funded under a separate JSDF grant, is not included in this proposed project. The RGC advised that they would use their own resources to continue supporting activities at that site

Project activities will support the achievement of the PDO by: (a) strengthening community groups to better identify and prioritize technology and infrastructure investments; (b) financing priority productive and social community infrastructure; and (c) scaling up agricultural and livelihood support activities.

The project would build on the successful implementation and experiences of the previous projects and good practices in the sector. It would address the remaining priority needs of beneficiaries by providing a package of agricultural technology assistance and infrastructure support to make their lands productive and sustainable. The project would have two main components plus a contingent emergency response component, summarized below, and would be implemented over a five-year period. Based on experience, the project duration is the minimum time required to achieve the desired outcomes and results, as well as the sustainability of investments and livelihoods. Annex 2 describes the two main components in detail.

## **2.1 Component 1: Infrastructure and Livelihood Systems**

**2.1.1 Sub-component 1.1: Social Land Concession Investment Planning and Prioritization.** This would support the planning and prioritization of investments in participating SLC sites in the project provinces, including: (a) participatory preparation (for the new site) and updating (at existing sites) of SLC plans, including land surveying, detailed land use planning, processing of requests for land allocation, sensitization and communication on SLC processes and implementation of participatory review processes by communal authorities, land allocation and demarcation of and within the participating SLC sites, and facilitation of requests for the land titling process for eligible beneficiaries in the participating SLC sites; and (b) identification, prioritization and planning of appropriate SLC sub-project technology and infrastructure investments, including the carrying out of a baseline survey, agro-ecosystem analysis, water management planning, assessment of environmental and social safeguards implications, and establishment of SLC-related management information system as input to the SLC planning and prioritization. For the new site in Dong commune, Kampong Thom province, activities will follow established procedures as in the first LASED project. The other existing SLC communities under the LASED project will benefit from second generation planning, land preparation, and related support activities under LASED II.

**2.1.2 Sub-component 1.2: Land Preparation and Infrastructure Development.** This would support the provision of technical assistance and community grants to beneficiaries for preparation and implementation of prioritized infrastructure sub-projects in the participating SLC sites, including: (a) provision of settling-in assistance to new land recipients; (b) provision of initial land preparation assistance including a first cover crop; and (c) provision of productive and social community infrastructure such as rural roads, small-scale irrigation systems, rural water supply and sanitation, education facilities, health posts and community centers, among others.

**2.1.3 Sub-component 1.3: Agriculture and Livelihood Development.** This would support the provision of technical assistance and community grants to beneficiaries for the purposes of consolidation and improvement of agricultural production systems and improvements in the livelihoods, food security and nutrition status of land recipients, including: (a) conduct of community organizing and development activities; (b) provision of agricultural service and extension support following a pluralistic service provider approach; (c) establishment of farmer-managed demonstration plots and model farms; (d) establishment and/or strengthening of farmers organizations, agriculture cooperatives, production and marketing groups and other community interest groups; and (e) establishment of a community development fund and provision of community grants to strengthen successful local initiatives in the participating SLC sites.

**2.2 Component 2: Project Management.** This component would support the provision of technical and operational assistance for the overall project administration and coordination, including: (a)

social and environmental safeguards management; (b) procurement planning and contracts management; (c) financial management, disbursement and audit; and (d) monitoring, evaluation and communication.

**2.3 Component 3: Contingent Emergency Response.** This component, with an initial allocation of zero dollars, is part of IDA’s support to an Immediate Response Mechanism (IRM) in Cambodia. The IRM allows reallocation of a portion of undisbursed balances of IDA-financed investment projects for recovery and reconstruction support following a formal Government request in the event of an eligible emergency. With IDA’s support, Cambodia is developing its Emergency Response Manual (ERM). The ERM will detail eligible uses, financial management, procurement, safeguard and any other necessary implementation arrangements for the IDA IRM. The preparation and acceptance of the ERM is a condition prior to disbursement of any funds reallocated to this component. In the event that the IDA IRM is activated using funding through this CER component, the Project Development Objective and results framework may be amended as needed under a Level Two restructuring to reflect the provision of immediate and effective response to the eligible crisis or emergency.

### 3. POTENTIAL IMPACTS OF LASED II

**3.1 Overall Environmental Safeguards Categorization.** LASED II is classified as Environmental **Category B** providing that its potential environmental impacts are minimal and reversible. LASED II triggers Safety of Dams OP/BP 4.37 due to potential irrigation or weir improvement to be confirmed during implementation and the same safeguard policies that had been triggered under the original LASED.

LASED II is implemented in the existing LASED and JSDF-funded sites and in one new site in Dong Commune, Kampong Thom Province. Social and environmental safeguard screening reports were prepared by the implementing agency and were endorsed by the Bank environmental and social safeguards specialists during the LASED Additional Financing (now transformed to LASED II) preparation in October 2013 and LASED supervision mission in November 2014. The new proposed SLC site in Dong Commune has been verified as not a protected forest or environmental hotspot.

**3.2 Environmental Impacts and Mitigation Measures.** The LASED II is built upon the established mechanisms for the implementation and monitoring of small-scale infrastructure investment projects at commune level. Below is an example of potential environmental impacts and mitigation measures for those small-scale infrastructure investment investments.

Type of small scale infrastructure investment	Environmental impact/problem	Mitigation measures
Road	<ul style="list-style-type: none"> <li>• Damage to fields or crops near construction</li> <li>• Damage caused by truck transporting laterite</li> <li>• Problem caused by dust and nuisance</li> </ul>	EMP for small-scale infrastructure or Environmental code of practice (ECOP) including careful construction technique
Bridges and culverts	<ul style="list-style-type: none"> <li>• Damage caused to the area around the construction site</li> <li>• Pollution of the stream or water body during construction</li> </ul>	Environmental code of practice (ECOP) including choosing to construct during dry season
Buildings	<ul style="list-style-type: none"> <li>• Damage to the area around the construction site</li> <li>• Pollution from waste materials</li> <li>• Bad hygiene because no sanitation provided for the workers on site</li> </ul>	Environmental code of practice (ECOP) including agreement with the contractor to clean the site carefully and remove all waste materials
Water supplies	<ul style="list-style-type: none"> <li>• Pollution from wastewater during well drilling</li> </ul>	Environmental code of practice

	<ul style="list-style-type: none"> <li>Water supply is contaminated because of bad technique during construction</li> </ul>	(ECOP) including agreement where waste water will flow to.
Weir construction or Irrigation works to address the problems from inequitable distribution of benefits and poor management of system.	<ul style="list-style-type: none"> <li>damage to area around site, pollution of streams, damage caused by construction equipment; operation impacts: flooding upstream, water shortage downstream, erosion around structure and canals, water quality changes, soil fertility damage from irrigation water, loss of fisheries, changes to agriculture increase fertilizer and pesticide use, social</li> </ul>	Environmental code of practice (ECOP)

**Table 1: Environmental impacts and mitigation measures of small-scale infrastructure investment**

**Source: adapted from the LASED PIM and the Commune/Sangkat Project Implementation Manual, 2009:90**

Access to grants by credit and savings groups would be subject to commitment by beneficiaries not to engage in practices that harm the environment. The budget has been allocated under the Project for further capacity development training and mentoring for safeguards implementation and environmental protection awareness of the implementing staff based at the sub-national level (see Annual Work Plan and Budget).

**3.2.1 Environmental Assessment.** The project investments such as small-scale community infrastructure and agricultural and livelihood activities may have minimal and temporary environmental impacts during implementation. In addition, agricultural and livelihood activities—though also small scale and done manually —may have some impacts on land and soil. However, the LASED experienced that those agricultural impacts are more positive thanks to the inter-cropping and crop rotation techniques and soil management techniques introduced by assigned staff of the provincial department of agriculture. Furthermore, LASED II will be promoting soil and water conservation; hence impacts are also expected to be minor and manageable. Based on the new site screening report by the government team in 2013 and the Bank verification 2014, there are no significant remnant forests/remaining patches of forests within the existing SLC s and the new SLC. The government will seek guidance from the Bank task team if there is any change in the status of the remnant forest. However, the experience of LASED was taken into account, for example, to carefully include different land uses in the planning and mapping processes and delineate those forest patches as communal forests for protection and conservation. This has proven to be successful under LASED and will continue to be adopted under LASED II. All the existing LASED and JSDF-funded sites are cleared from unexploded ordinances (UXO). The new proposed site (in Dong Commune, Kampong Thom Province) was screened and confirmed to have no UXO during the LASED. Next sections provide further details about the two tools and procedures to address the minimal and reversible environmental impacts during the project implementation

**3.2.2 Safety of Dams (OP 4.37)<sup>2</sup>.** The sub-component 1.2 on Infrastructure Development finances small-scale irrigation systems including construction of small upstream embankments (i.e. weir or water storage) for small-scale gravity irrigation in the prioritized communities. Most irrigation embankments collapses are due to various reasons including inadequate design or poorly constructed and lack of maintenance. The exact sites and number of these embankments are not determined yet. Therefore, during the implementation stage, the implementing agencies (e.g. NCD DS) or its consultant will conduct

<sup>2</sup> For the life of any dam, the owner is responsible for ensuring that appropriate measures are taken and sufficient resources provided for the safety to the dam, irrespective of its funding sources or construction status. The Bank distinguishes between small and large dams. Small dams are normally less than 15 m in height; this category includes, for example, farm ponds, local silt retention dams, and low embankment tanks. For small dams, generic dam safety measures designed by qualified engineers are usually adequate.

environmental safeguard screening by using the below form (Form 1) in order to determine if each small-scale irrigation or weir investment will require any environmental analysis or assessment.

Province / Municipality	District/Khan	Commune /Sangkat
Name of Project :		
Does the project need environmental analysis (EA)?		Yes D No D
If not, reason why? .....		
.....		
.....		
Does the project need Report on Environmental Safeguard Measures in connection		Yes D No D
If not, reason why? .....		
.....		
Date.....C/S Chief	Date: ..... The official conducted the screening	

**Form 1. Environmental Safeguard Screening for the irrigation or weir investment**

Source: adapted from the Commune/Sangkat Project Implementation Manual, 2009:18

If an additional environmental analysis/assessment is required during the implementation stage, the implementing agencies (specifically the National Committee for Sub-National Democratic Development Secretariat (NCDDS)) or its consultant will carry out a separate environmental analysis/assessment of these small upstream embankments to determine that there are no risk or negligible risk of significant adverse environmental impacts due to potential failure of the structure to local communities and assets, including assets to be financed as part of the LASED II. In other words, the separate environmental assessment will be fully integrated into the technical feasibility study options by (i) identifying and analyzing the potential environmental and social impacts (direct, indirect, induced and cumulative) of the considered options; (ii) identifying and quantifying the costs of the corresponding mitigation measures; and (iii) incorporating these costs into the economic and financial analysis. Furthermore, part of the engineering design and operation of the upstream embankments will be delivered by a qualified engineer and its safety measures would be verified by a World Bank Dam Safety Expert (who has been regularly consulted) to avoid or minimize any potential adverse impacts such as partial or total failure that can cause environmental damage.

**3.2.3 Natural Habitat Assessment.** The land use plan implementation and the small scaled infrastructure investments may impact on the natural habitat such as wetlands, natural ponds or remaining forest patches. However the impact of small-scale civil works on natural habitats will be avoided through the Land use planning (see Tool 1). The land use planning process will also identify different land uses within the SLC and delineate natural habitats (e.g. forest patches or wetlands or natural ponds) for community protection and preservation, as practiced under LASED. No known protected areas in the existing SLC sites during LASED II implementation and the new site in Dong Commune. However, the government team will check again and advise the Bank if any suspicion before the infrastructure investments start during the project implementation.

**3.2.4 Forest.** The infrastructure investments and the development of new SLC site may impact on remnant forests. However, the practice under LASED of including and delineating different land uses, including the community forest, in land use planning will be continued. Remnant forests, if any, will be delineated and reserved for community protection and conservation (further details are discussed in the Tool 1).

**3.2.5 Pesticides.** While LASED II will have a strong focus on agricultural production, it is not expected to lead to increase usage of pesticide as experienced under LASED. Communities in LASED sites rely solely on crop rotation, inter-cropping and multiple cropping to manage pests and diseases rather than on

pesticides because of the prohibitive costs of pesticides and impacts on health. The adoption of sound agricultural practice workshops will continue to be promoted and supported by the agricultural department staff under LASED II.

**3.2.6 Cultural Heritage.** The infrastructure investments may impact on unknown, buried physical cultural resources. . No issue of physical cultural resources has been encountered under the LASED project. However, the chance find procedures of cultural heritage clause during the infrastructure construction would be included in the contract documents. The following chance find procedures are to be included in all civil works contracts:

If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during the civil work, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects; and
- Notify "any cultural heritage" found to the government implementing agency or the relevant provincial Culture Department as early as possible.

Civil work may resume only after permission is given from the implementing agency or the provincial Culture Department.

### ***Tools applied for Land and Infrastructure Development in Component 1***

The LASED II has sufficient tools and capacities to manage the safeguard aspects. The project can build on established mechanisms for screening, supervision and monitoring of infrastructure projects with regard to potential negative impacts. Potentially environmentally sensitive infrastructure investments (e.g. weir or irrigation) will be subjected to an additional environmental screening by the government implementing agency (i.e. NCDD) to identify appropriate mitigation measures. Access to grants by credit and savings groups would be subject to commitment by beneficiaries not to engage in practices that harm the environment. The budget for further safeguards capacity building and environmental protection awareness of concerned officials and commune councils has been allocated under the project.

The same as the LASED project, LASED II has two issues emerging from land use and livelihood development activities required under **sub-component 1.1** and small-scale infrastructure investments required under **sub-component 1.2**, which merit attention from the stand point of good environmental safeguard practices. Environmental Assessment and Environmental Management Plan (EA-EMP) consisting of (i) land use planning and implementation procedure for agricultural, and livelihood activities and (ii) an Environmental Management Plan for small-scale infrastructure.

### ***3.3 Tool 1: Land Use Planning and Implementation Procedure***

The land use planning and implementation procedure is used to delineate natural habitats (e.g. forest patches or wetlands or natural ponds) for community protection and preservation. Sub-Component 1.1 on agricultural and livelihood activities may have minimal environmental impact during implementation. The agricultural and livelihood activities though also small scale and done manually may have some impacts on land and soil, the project based on LASED will be promoting soil and water conservation, hence impacts are also expected to be minor and manageable. There may be some remnant forests/remaining patches of forests within the new SLC that maybe affected during the land development, however the experience of LASED was taken into account, i.e., to carefully include different land uses in the planning and mapping processes and delineate those forest patches as communal forests for protection and conservation. This has proven to be successful under LASED and will continue to be adopted under LASED II.

**3.3.1 Integration of Lesson Learned.** The potential minimal and reversible environmental impacts of **Sub-Component 1.1** can be managed through land use planning and implementation procedure. The land use planning and implementation procedure was updated by the Recipient to reflect the original LASED's environmental safeguard lessons learned such as:

*“Land Use Planning, Preparation and Implementation. The participatory land use maps and site development plans of all SLCs have clearly delineated different land uses. The land use plan integrated the remaining patches of forests, water bodies and planned green buffers, which are all declared for conservation and protection. This was done in coordination with the relevant line departments, land recipients and local authority. There is no conversion of community forests, water bodies or common green areas in the LASED and NGO sites for residential or agricultural uses. The detailed land use planning took into account early the environmental and agricultural carrying capacity”.*

The social safeguard lessons learned are reflected in a separate resettlement policy framework and the updated PIM. The project takes the approaches to incorporate environmental considerations into the overall planning process. The primary issues of concern with respect to the environmental issue are:

- (a) Loss of or damage to functional forests, critical habitats and wildlife corridors in and around SLC areas;
- (b) Inappropriate and/or over-intensive land use degrading soil and water resources;
- (c) Direct and indirect environment and natural resource impacts stemmed from rural infrastructure investments in component 1.2.

***A multi-step participatory land use planning process incorporating up-to-date satellite imagery, aerial photography, technical support, agro-ecosystem analysis, guidance notes and screening forms.***

**3.3.2 Land Screening.** All SLC sites proposed by communes will initially be screened against the “hot spots” map to determine overlap or proximity to critical habitats or forests, protected areas, cultural heritage sites and known Indigenous Peoples communities. In the event that a propose site will affect such areas, communes will be urged to identify alternative sites. For SLC proposals that are accepted for further preparation, the Screening and Guidance notes for Commune and District use specifically require local government staff and beneficiaries to identify alternatives when planning an SLC and to document such alternatives for review by the provincial land use allocation committee secretariat (PLUAC Secretariat). Once a site has been accepted, AEAs will be undertaken to verify the potential carrying capacity of the site using a participatory planning methodology. The assessment process incorporates technical features such as mapping, economic analysis of alternatives, analysis of opportunities and constraints, lessons learned from exploitation of nearby similar agro-ecosystems, and assessment of potential land acquisition impacts under land use scenarios. State land registration of the proposed site also requires agreement from provincial department of environment, Ministry of Environment (MoE) and Forestry Administration, MAFF, staff as well as public display and comment. The results of these procedures will be reviewed by the PLUAC Secretariat prior to authorizing selection of land recipients and allocation of land. Experience from the three commune pilot SLC sites indicates that potential negative environmental impacts can be avoided through provision of current remote imagery to verify denser forest areas and implementation of the AEA process.

**3.3.3 Land Use Planning and Allocation.** The results of the Agro Ecosystem Analysis (AEA) assessments will be used to develop an SLC sub-project land use plan with the selected land recipients to determine, based on existing vegetation, soils and water resources, how to introduce sustainable land uses and

agricultural practices. The SLC subproject land use plans will emphasize soil structure, nutrient and water management, integrated pest management and appropriate land use systems including intensive rice, vegetable or cash crop production, grazing and agro-forestry. It will also identify areas for community forestry to regenerate degraded areas, particularly where these can serve as buffer zones to habitat and forested areas. These land use plans will be reviewed by the PLUAC Secretariat as part of the SLC subproject plan and its implementation monitored by the District and PLUAC Secretariat.

If applied properly, the land use planning process will involve both considerations of what constitutes a functional forest (for economic, conservation or protection use) and how to determine, using Geographic Information Systems (GIS) approaches, the extent of degradation of the forest and thus the danger of a “do nothing” approach. The project will support the identification of high priority conservation sites using best available data and new technologies. For example, the planning process will involve the combined use of SPOT 5 imagery and soil surveys will contribute to the determination of which areas to retain in forest cover for protection purposes given soil type suitability for agriculture, slopes, and position in the micro watershed involved. Within lands selected for agricultural use, planning criteria include the need to maintain a minimum tree cover will be retained for shade and shelter. Through the technical assistance provided by the project, specialists will be trained in environmental planning of micro-watersheds with communities so that, for example, contour lines of existing forest will protect erosion prone soils, that no “islands” of isolated forest are left unconnected to surrounding forest, and that important watercourses have appropriate forest buffer zones along their length. Forests for particular economic use such as resin extraction and bamboo groves will be retained for protection and community use.

### ***3.3.4 LAND USE PLANNING AND IMPLEMENTATION PROCEDURE for the new site in Dong commune***

***3.3.4.1 Sub-component 1.1: SLC Investment Planning and Prioritization (Experiences in LASED).*** Based on the LASED experience, the activities Flow Map with Safeguards in **sub-component 1.1** in Land Use Planning process of SLC are:

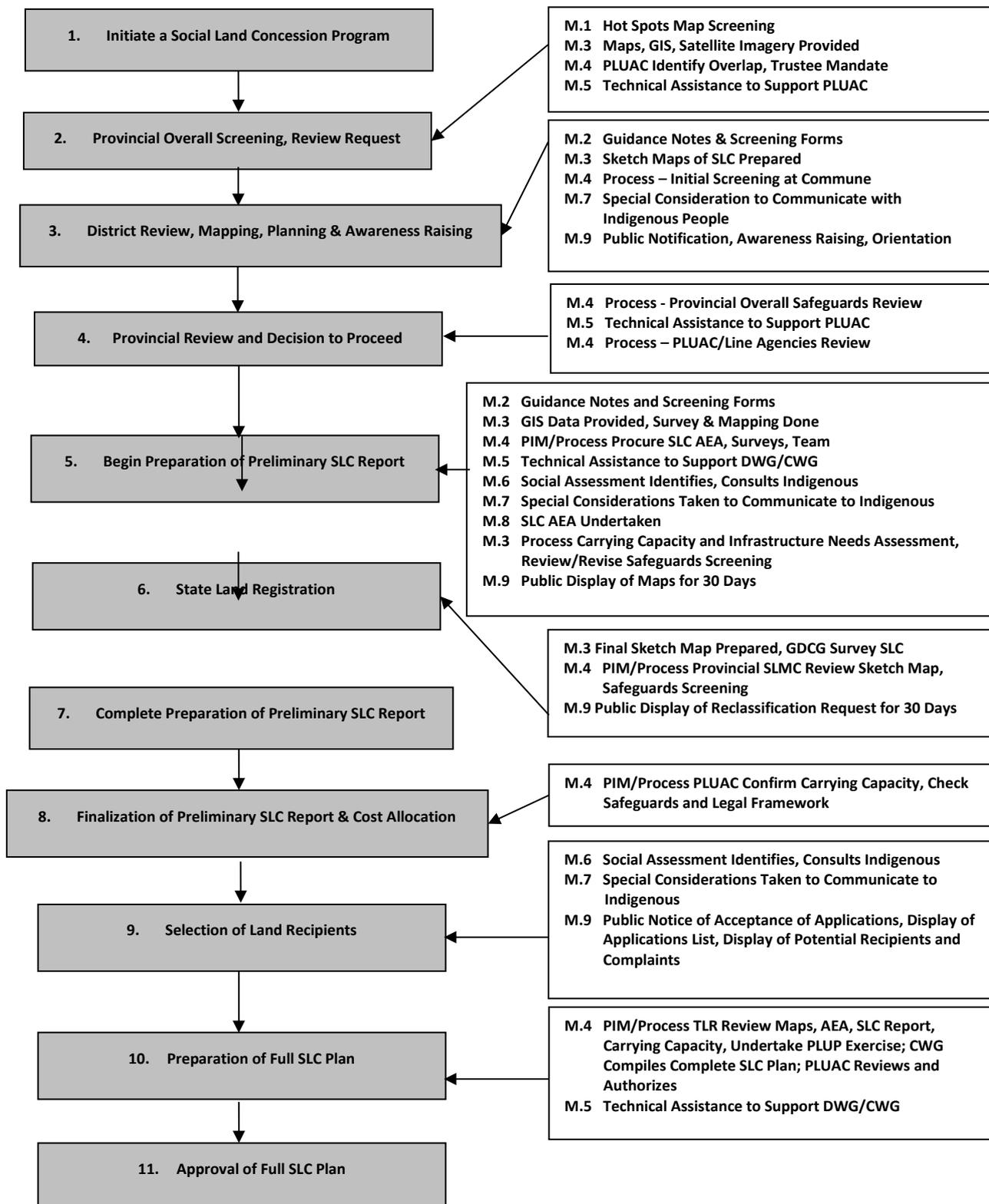


Figure 2. Flow Map with Safeguards in sub-component 1.1 Land Use Planning process  
Source: LASED PIM

**3.3.4.2 Sub-Component 1.1: SLC Investment Planning and Prioritization.** The potential negative environmental impact of **Sub-component 1.1** Land Use Planning process and the mitigation measures proposed to address them are:

Potential Impacts (I.)	Management/Mitigation/Monitoring Measures (M.)
<p>I.1 The areas identified for an SLC directly or indirectly affects a nature reserve/wilderness area or protected habitat, important forest, managed resource protected area (e.g., community forest), wildlife habitat/corridor, national monument or cultural heritage site.</p>	<p>M.1 <b>Province uses “Hot Spots” map to screen</b> out these areas from consideration for SLC at first stage and flag potentially affected areas nearby or downstream of SLC;</p> <p>M.2 <b>Guidance notes and screening forms</b> for Forestry and Critical Habitats used during participatory planning steps provide instruction on identifying and excluding these areas from the SLC;</p> <p>M.3 <b>Maps, GIS data and satellite imagery</b> are provided to Commune/DWG that identify these areas for exclusion within SLC and consideration of effects on areas outside of SLC;</p> <p>M.4 <b>Project Implementation Manual (PIM) and Process</b> includes review of screening forms, maps at different levels and steps in SLC planning and implementation;</p> <p>M.5 <b>Technical Assistance</b> in environmental planning provided at provincial level and extending to district and commune.</p>
<p>I.2 The area identified for a SLC is used by other villages/indigenous people for traditional livelihoods or has cultural or spiritual significance for them.</p>	<p>M.3 <b>Traditional land use/cultural or spiritual items or areas mapped</b> in land identification and land use planning processes;</p> <p>M.6 <b>Social Assessment (IPPF)</b> identifies indigenous people in each commune and special efforts made to inform and consult them throughout process;</p> <p>M.7 <b>Special considerations in communicating</b> information, options for land allocation, and in training and extension programs.</p>
<p>I.3 The area identified for a SLC is already part of or planned to be an economic concession.</p>	<p>M.4 <b>PIM and Process</b> - the <b>PLUAC</b> includes line agencies charged with responsibility for managing economic land concessions who can <b>identify where there may be overlap</b> and inform during the “Hot Spots” map review about potential conflicts.</p>
<p>I.4 Poor land use planning results in inappropriate land use, loss of economic, protection or non-timber forest cover and loss of or damage to critical habitats inside or outside the settlement areas.</p> <p>I.5 Indirect impacts of the project on areas adjacent to our outside of SLC areas are not considered adequately in the plan resulting in negative impacts on water quality, wildlife movement, burning of nearby areas during</p>	<p>M. 2 <b>Guidance notes and screening forms</b> for Forestry, Agricultural Site Quality/Carrying Capacity and Critical Habitats provide instruction on identifying and managing these aspects within and around an SLC and consideration of project siting in relation to surrounding areas and avoiding any unnecessary deforestation;</p> <p>M.3 <b>Maps, GIS data and satellite imagery</b> are provided to Commune/ DWG and forest survey undertaken that delineate historical and recent land cover within and nearby SLC;</p> <p>M.4 <b>Project Implementation Manual and Process</b> includes ongoing role of DWG for monitoring and including review of screening forms, SLC AEA, and maps at different levels while quality of analysis is checked at different steps in SLC planning and implementation process;</p> <p>M.5 <b>Technical assistance</b> to DWG and provincial agencies as</p>

Potential Impacts (I.)	Management/Mitigation/Monitoring Measures (M.)
clearing, spread of weeds and insect pests from agriculture into natural areas, and over-grazing of adjacent forest/grasslands.	<p>well as contracted support as required to assist in addressing issues of particular importance or need;</p> <p>M.8 <b>SLC Agro-Ecosystem Analysis (AEA)</b> leads commune and district staff and villagers through a participatory process considering agricultural and natural resource management planning and implementation;</p> <p>M.9 <b>Public notification, review and participation</b> throughout process including NGOs;</p>
I.6 Poor consideration of land capability, strong demand from farmers and/or pressure on RGC staff to increase TLR numbers leads to unsustainable settlements in which there is inadequate provision for basic livelihoods.	<p>M.2 <b>Guidelines and screening notes</b> for Agricultural Site Quality/Carrying Capacity focus specifically on ensuring that only sufficient land required for provision of staple food and cash needs of the household are provided for and include an income estimate that evaluates incomes against poverty criteria to ensure TLR exceed this.</p> <p>M.8 <b>SLC AEA</b> includes detailed process and focus on estimation of carrying capacity and appropriate land development approach that incorporates community forestry as cornerstone of natural resources management;</p>
I.7 Poor social planning for indigenous communities, women and other beneficiaries leads to undesirable impacts on traditional land use and/or social exclusion;	<p>M.1 <b>Province uses “Hot Spots” map</b> to identify local indigenous communities relative to the SLC;</p> <p>M.4 <b>Project Implementation Manual</b> includes multi-stage Participatory Process of continuous engagement with stakeholders in identification and allocation of land and household survey and monitoring system.</p> <p>M.6 <b>Social Assessment</b> identifies indigenous and other vulnerable people in each commune and special efforts made to inform and consult them throughout process;</p> <p>M.7 <b>Special considerations in communicating</b> information options to indigenous people for land allocation, and in training and extension programs;</p> <p>M.9 <b>Public notification, review and participation</b> throughout the process including NGOs supports dissemination of information to all focusing particularly on vulnerable.</p>
<p>I.8 An estimate of the number of families to be settled is made – this could potentially induce families to move into the site before a decision is made to undertake an SLC;</p> <p>I.9 Maps and public notices about project showing planned settlement could lead to illegal logging to extract resources and encroachment;</p>	<p>M.3 <b>Maps, GIS data and satellite imagery</b> provide historical evidence of occupation and land use allowing identification of new encroachment;</p> <p>M.4 <b>PIM and Process</b> sets cut-off date beyond which no compensation is given for settlers and includes survey to establish current occupancy and land use; <b>Line agencies</b> will be informed about proposed SLC through their <b>participation in the PLUAC</b> and will thereby put measures in place to monitor areas and prevent encroachment and settlement in interim period;</p> <p>M.9 <b>Public notification, review and participation</b> includes extensive information campaign that emphasizes rules.</p>

**Table 2. Potential impacts and mitigation measures of Land Use Planning process**

Source: LASED PIM

### **3.4 Tool 2: Environmental Management Plan for Small-Scale Infrastructure**

The small-scale infrastructure investments under component 1 may impact on the natural habitat such as wetlands, natural ponds or remnant forests/remaining forest patches. However the impact of small-scale infrastructure on natural habitats will be avoided through a screening process and if cannot be avoided the EMP will be developed and implemented to manage those impacts. In addition, the land use planning process will also identify different land uses within the SLC and delineate natural habitats (e.g. forest patches or wetlands or natural ponds) for community protection and preservation, as practiced under LASED. The infrastructure investments may impact on unknown, buried physical cultural resources. Chance Find Procedures in the C/S PIM are used to address chance find during project implementation. Thus far, no Chance Find Procedures issue has been encountered under the LASED project.

The Environmental Management Plan (EMP) is used to manage temporary and reversible impacts caused by small-scale civil works. The EMP is aligned with the government Commune/Sangkat Fund Project Implementation Manual (C/S PIM) for implementing and monitoring the environment and safety measures for infrastructure investments at the community level.

**3.4.1 Lesson Learned.** The potential minimal and reversible environmental impacts of small scale infrastructure investments are managed through the Environmental Management Plan (EMP) for small-scale infrastructure. The Environmental Management Plan (EMP) for small scale infrastructure was updated by the Recipient to reflect the original LASED's environmental safeguard lessons learned such as:

- *Infrastructure Investments and Services. The Provincial LASED Team worked closely with the Commune Council to monitor the contractors and ensure safeguards and safety measures at the construction sites. However, recording of the safeguards monitoring results requires more improvement since written monitoring record is limited. Water quality analysis was also done for groundwater sources in the sites to ensure that these are not contaminated. The project continues improving water and sanitation at the sites by including the provision of latrines to household-beneficiaries.*
- *Commune/Sangkat Fund Project Implementation Manual (C/S PIM). One of the implementing agencies (i.e. NCDDS) has experienced on environmental safeguards implementation, but needs further support in implementing the Commune/Sangkat Fund Project Implementation Manual (C/S PIM). This includes procedures for monitoring and recording the environment and safety measures for infrastructure investments at the community level. The EA-EMP is aligned with the overarching guidelines-for example, with regards to infrastructure construction as laid out in the "Commune/Sangkat Fund Project Implementation Manual (C/S Fund PIM)" that has also been used by the Bank's Rural Infrastructure and Local Governance (RILG) project. The current version of the C/S Fund PIM has been endorsed by the Royal Government of Cambodia (RGC) through "Decision No. 024 SSR / NCSC" dated May 20, 2005. The Guidelines are also consistent with the requirements of the Bank Environmental Safeguards Operational Policy (O.P.4.01).*

**3.4.2 Sub-component 1.2. For Small Investment (C/S PIM).** The infrastructure development will include a range of infrastructure development. These are relatively small investments and will therefore be channeled through the existing and well-established and supported C/S PIM. The C/S PIM has developed progressively through several stages to its present point, to where it is now fully integrated within the RGC annual cycle of planning and implementation. It includes a completed and detailed set of documents and procedures including a set of principles, guidelines, forms and training.

Based on the LASED experience, Infrastructure Development investment can include (a) Laterite Road within 2 km; (b) Earth road; (c) Annual Maintenance of Roads; (d) Domestic Water Supply; (e) Additional Water Supply; (f) Schools and Equipment; (g) Irrigation Works; (h) Health Posts; (i) Community Facilities; (j) Environmental/traffic Markers; (k) Infrastructure Maintenance.

**3.4.2.1 Before construction of small-scale infrastructure.** Table 1 regarding the potential negative environmental impacts and the mitigation measures proposed to address them.

**3.4.3.1 During Procurement and Contract Management of small scale infrastructure investments.** In the Bidding and Contract Agreement documents (see page 309 of the C/S PIM), the Implementing Agencies (LASED II/ NCDD Procurement Officer, the assigned safeguard officer and Commune Chief) will include in the construction bidding and contract document “clauses of chance find procedure of cultural heritage properties and safety and environmental protection measures”. An example of cultural property procedure is in the event that culturally significant properties are found during the construction, the contractor shall immediately stop any civil work and report to the government implementing agencies).

An example of a clause of safety and environmental protection measures can be “...the Contractor agrees to ensure that the work is carried out in a safe manner and with the minimum disturbance to people living close to or passing by the site, or damage to the environment. The place of disposing of excavated earth, dirty water or other waste materials must be approved by the Project Owner before disposal starts. On completion of the works the contractor shall be responsible for removing all plant, surplus materials and wastes from the site and for restoring the site to a clean and tidy condition...”. This safety and environmental protection clause can be found in Form 50. Condition of Contract for Construction Work on page 309 of the C/S PIM 2009.

**3.4.3.2 during and after small scale infrastructure construction.** Based on LASED lessons learned, the below Form 18.4 on Environmental Monitoring Plan of the C/S PIM will be used or can be modified by the commune chief with the support of the existing NCDD safeguard team and technical support officer) to record their monitoring of implementation of the “safety and environmental protection clause” under each infrastructure investment at the commune/community level. No additional budget is expected as LASED II will use the existing safeguard advisory team at NCDD and the engineers to monitor and record the EMP compliance. Training on how to use Form 18.3 and Form 18.4 will be supported by the World Bank task team. The PIM also set aside budget allocation for staff capacity development training including on safeguard implementation and reporting.

What	Where	How	When	Who
What will be monitored?	Place for monitoring?	How to monitor?	Times when monitoring will be done?	Who will be responsible to monitor?
<i>Dust from traffic in village</i>	<i>Village school</i>	<i>Teachers report if dust problems worse or better than before project</i>	<i>During construction After completion (at end of year)</i>	<i>CC roads sub-committee and teachers</i>

Form 18.4 on Environmental Monitoring Plan of the C/S PIM

Source: The Commune/Sangkat Project Implementation Manual, 2009:91

Verified on .....by name of the Technical Support Official.....

Agreed on.....C/S Chief

**Note:** Small upstream embankments (i.e. weir or water storage) are the new type of infrastructure investments that will be financed by LASED II. Since the exact sites and number of these embankments

are not determined yet, the implementing agencies (specifically NCDD) or its consultant will carry out a separate environmental assessment of these small upstream embankments during the implementation stage. This stand-alone environmental assessment will determine potential adverse environmental impacts and environmental and safety mitigation measures from a Dam Safety perspective. The environmental and safety mitigation measures will be used by a qualified engineer and the assigned safeguard officer to prepare, construct and supervise the irrigation embankment or weir investments by following the C/S PIM.

#### 4.4.1 Institutional Arrangements for Monitoring and Reporting

The monitoring and reporting of environmental safeguard compliance follows the LASED II PIM in the process of land preparation project. It requires several surveys including land identification, soil survey, forest survey, etc. The infrastructure development in sub-component 1.2 follows the LASED II PIM in terms of making sure the construction of small scale infrastructure follows the C/S PIM. Monitoring of inputs to outputs will be carried out through the review of quarterly provincial implementation management reports (See also details of the overarching institutional arrangements in Annex 3 of the PAD). The below section describes the specific responsible institutions for the EA-EMP monitoring and reporting.

The GSSLC will be responsible for coordinating and reporting the monitoring of environmental and social safeguard implementation, with support and inputs from NCDD Secretariat, the Ministry of Agriculture, Forestry and Fisheries - General Directorate of Agriculture (MAFF-GDA), and the Implementing Unit in the Ministry of Rural Development. In overall, reporting of environmental and social safeguard implementation follows the project implementation manual of LASED-II. Monitoring of outputs will be carried out through the review of quarterly provincial implementation management reports. Quarterly reports will focus on implementation progress and information required by commune councils, DWGs, PLUACs and GSSLC and NCDD to identify any delays in the implementation of the AWPBs so that action can be taken to address constraints or revise expectations of progress. An Annual Implementation Report will also be prepared by GSSLC and NCDD (with support of MAFF-GDA), and the Implementing Unit in the Ministry of Rural Development. GSSLC and NCDD will consolidate to IDA, by the end of March of each year covering the activities of the previous calendar year.

The World Bank supervision will be carried out to clarify requirements as well as to emphasize the importance of carrying out the measures consistent with the key environmental safeguard documents and the project implementation manual. The Environmental Safeguards Specialist in the World Bank will separately review adherence to the Environmental Safeguards documents during their annual supervision mission. All records of the EA-EMP monitoring reports shall be kept by the recipient for review during these supervision missions.

	Project Stage	Task	Responsible	Budget Required
<b>Tool 1.</b> Land Use Planning and Implementation Procedure	Land Screening	Screen hotspots and environmental sensitive areas such as wetlands, water bodies, cultural heritage, and protected forest.	GSSLC with support of sub-national level of LASED II team (PLUAC, Land Technical Support Unit (LTSU), Technical Support Officer (TSO), District Working Group (DWG) and	Part of Land Use Planning and Implementation Procedure in Sub-component 1.1

			commune council	
	Land Use Planning and Allocation	Emphasize soil structure, nutrient and water management, integrated pest management, crop production and agro forestry etc.	PLUAC with support of GSSLC and MAFF	Part of Land Use Planning and Implementation Procedure in Sub-component 1.1
<b>Tool 2.</b> Environmental Management Plan for small scale infrastructure investments	Before construction (civil work)	Include a clause of environmental protection measures and a chance of finding cultural resources during civil work in the bidding and contract documents. The clause can be adopted from Form 50 of the C/S PIM.	NCDDDS/LASED II team, and Commune Chief	Part of the infrastructure design and procurement process
	During Procurement and Contract Management	Include a clause of safety and environmental protection measures in the contract documents. The clause can be taken Form 50 of the C/S PIM.	NCDDDS/LASED II team, and Commune Chief	Part of the contract management process
	During and after Construction (civil work)	Record the monitoring results in Form 18.4 on Environmental Monitoring Plan of the C/S PIM. The record focuses on safety and environmental protection measures	NCDDDS/LASED II team, and Commune Chief	Part of the infrastructure investment monitoring and reporting

**4.4.2 Tool 1.** Land Use Planning and Implementation (in the EA-EMP) will be implemented and monitored by PLUAC with support of GSSLC and sub-national level of LASED II team (Land Technical Support Unit (LTSU), Technical Support Officer (TSO), District Working Group (DWG) and commune chief for land use planning activities and NCDDs for land preparation and infrastructure development in the project sites.

**4.4.3 Tool 2.** Environmental Management Plan for small scale will be implemented and monitored by NCDDDS/LASED II team and sub-national level of LASED II team (Technical Support Officer (TSO), District Working Group (DWG) and commune chief)

The Sub-national team at provincial level will consolidate the EA-EMP’s report from commune and district teams and will send the report to national level (GSSLC, NCDDs and MAFF) quarterly for integration into the project narrative report and submit to the World Bank.

#### 4. DISCLOSURE OF INFORMATION

The revised EA-EMP in English and Khmer was publicly posted on the LASED II Project website setup as part of the safeguards review at [www.ncdd.gov.kh](http://www.ncdd.gov.kh) in both the English and Khmer languages on **13 January 2016**. Hard copies of the EA-EMP were made available at the Provincial Departments of Land

Management, Urban Planning and Construction, Provincial Departments of Environment in Kratie, Tbong Khmum (formerly part of Kampong Cham), Kampong Thom, Kampong Chhnang, and Kampong Speu, and at the offices of the commune councils where the SLCs are implemented under this LASED II. The key environmental requirements outlined in the EA-EMP are reflected in the LASED II project implementation manual (PIM).