**Strengthening Marine Protected Areas in SE China to conserve globally significant coastal biodiversity**

**(China-Protected Areas System Reform (C-PAR) Program Child Project #4)**

**Environmental and Social Safeguards Capacity-Building Measures**

**Final Draft**

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# Abbreviations

ADB Asian Development Bank

AFIP Academy of Forest Inventory and Planning, National Forestry and Grassland Administration

AGRS Appeal and Grievances Redress System

BQCW Beihai-Qinzhou Coastal Waters

C-PAR China’s Protected Area System Reform

CWD Chinese White Dolphin

DNPAM Department of Natural Protected Area Management, National Forestry and Grassland Administration

ESA Ecologically Sensitive Area

ESG Environment, Social and Governance

GEF Global Environment Facility

KBA Key Biodiversity Area

LAP Livelihood Action Plan

MARA Ministry of Agriculture and Rural Affairs

MEM Ministry of Emergency Management

MNR Ministry of Natural Resources

MNR Ministry of Natural Resources

MoF Ministry of Finance

MPA Marine Protected Area

NBSAP National Biodiversity Strategy and Action Plan

NFGA National Forestry and Grassland Administration

NGO Non-Governmental Organization

NIM National Implementation Modality

NNR National Nature Reserve

NR Nature Reserve

PA Protected Area

PNR Provincial Nature Reserve

PRC Peoples Republic of China

SAR Special Administrative Region

SDG Sustainable Development Goal

SESP Social and Environmental Screening Procedure (UNDP)

SOA State Oceanic Administration

TIO Third Institute of Oceanography

UNDAF United Nations Development Assistance Framework

UNDP United Nations Development Programme

XBCW Xiamen Bay Coastal Waters

ZJCW Zhuhai-Jiangmen Coastal Waters

# Executive Summary

This institutional empowerment and management development project aims to conserve globally significant coastal biodiversity in southeast (SE) China through integrated seascape planning and threat management, Marine Protected Areas (MPA) network expansion, and strengthened MPAs operations. The project focuses on coastal ecosystems, using the Chinese White Dolphin (CWD) as an indicator and flagship species to engage multiple stakeholders in novel ecosystem-based approaches. The target area for the project is the three provinces in southeast China: Fujian, Guangdong, and Guangxi. The project's activities are carried over three components:

* Component 1: Strengthened MPA legal framework and mainstreaming and expanding MPA network.
* Component 2: Demonstrates improved MPA and Ecologically Sensitive Area (ESA) management.
* Component 3: Monitoring, evaluating, and sharing knowledge and information on coastal habitats and species.

This study includes the update of the Social and Environmental Screening Template (SESP); where a total of eight risks have been identified. Risk 8: Climate change impacts are expected in China's coastal ecosystems, risking achieving project targets/objectives, identified as a moderate risk and is subject to change to low Risk by the end of the project when the project management develops relevance to the national and regional Risk Emergency Response of MPAs. Seven risks have been assessed as low-significance risks requiring monitoring and mitigation measures. The low risks are:

(1) Risk 1: access restrictions for fishermen/women);

(2) Risk 2: Existing community conflicts over access to marine resources could be exacerbated by project activities;

(3) Risk 3: There are gender disparities at project sites that could potentially be reproduced by the creation/enhanced management of MPAs;

(4) Risk 4: Project activities will occur within/adjacent to environmentally sensitive areas posing potential risk to sensitive habitats and species;

(5) Risk 5: There are small levels of ethnic minorities in project sites that could be impacted by project activities

(6) Risk 6: Creation of MPAs and ESAs will change the use of marine resources with potential adverse impacts on habitats;

(7) Risk 7: Project will address harvesting of fish and aquatic species, which could damage aquatic habitats if carried out at unsustainable levels

The overall project risk categorization is low. An ESMF has been prepared for the project (and three other CPAR projects) outlining the additional safeguard measures that apply to the project and will be completed during the project to minimize potential risks. This updated SESP template shall form the basis to complete and endorse the mitigation measures.

The proposed mitigation measures shall include the following:

1. Update Stakeholder Engagement Plan
2. Appeal and Grievance Redress System
3. Livelihood Action Plan
4. Disaster Response Plan
5. Sustainability Reporting

This report presents the approach to the project capacity-building measures. The measures include stakeholder mapping (SEP) and their roles in project development and sustainability. The Appeal and Grievance Redress System (AGRS) is designed to receive views and complaints from the project-impacted communities in a confidential and private environment. The AGRS, when developed into an online real-time system, should be considered as a case in the innovation of community participation. The AGRS could be customized to obtain views on a specific initiative. For example, the AGRS could be customized to assess the eco-compensation measures in a particular community in the project area. The Disaster Response Plan (DRP) responds to climate threats in the project area. The MPA administration should develop the DRP as part of existing national and regional DRPs. To appeal for funding and investment to the MPAs-Administration there is a requirement for standard reporting to the project's share and stakeholders. Standard Sustainability Reporting to national shareholders provides the venue to receive funding from private enterprises as part of their Corporate Social Responsibility (CSR). In addition, it should enable the MPAs-Administration to issue green usufruct bonds.

Adopting and implementing the proposed capacity-building measures in this report are essential for the sustainability of MPAs.

## Project Background

This institutional empowerment and management development project aims to conserve globally significant coastal biodiversity in southeast (SE) China through integrated seascape planning and threat management, MPA network expansion, and strengthened MPAs operations. The project focuses on coastal ecosystems, using the Chinese white dolphin (CWD) as an indicator and flagship species to engage multiple stakeholders in novel ecosystem-based approaches. The target area for the project is the three provinces in southeast China: Fujian, Guangdong, and Guangxi.

As the only C-PAR child project focusing on coastal and marine ecosystems, this project offers opportunities for replication and learning across the marine environment, linking marine and terrestrial approaches and between Marine Protected Areas MPAs and Terrestrial Protected Areas TPSs.

The rich coastal and marine resources, in turn, support essential industries such as fishing, maritime shipping, and oil and gas exploration, which jointly contribute to over 10% of China's overall GDP and are growing at an annual rate of 15%. China already provides substantial financial support to strengthen the capacity of developing countries for environmental protection and marine ecosystem conservation through platforms such as the UN Environment Trust, the China-ASEAN Maritime Cooperation Fund, as well as through initiatives such as the Belt and Road Initiative in cooperation with Southeast Asia, South Asia, and the developing countries in Central Asia, Africa, and other regions. In 2016, the State Oceanic Administration newly approved 16 national marine parks. The PRC has already established 250 marine nature/special reserve zones (marine parks) of different levels, with a total area of 124,000 km2.  The project has three pilot seascapes: a) "Xiamen Bay Coastal Waters" in Fujian Province, b) "Zhuhai and Jiangmen Coastal Waters" in Guangdong Province," and c) "Behai and Qinzhou Coastal Waters" in Guangxi Province. The project has five target nature reserves and one proposed nature reserve: Shankou Mangrove National Nature Reserve (NNR), Dugong Chinese White Dolphin (CWD) NNR, and the proposed Sanniang Bay CWD Provincial Nature Reserve (PNR) in the pilot area of Behai and Qinzhou Coastal Waters, Pearl River Estuary CWD NNR (PRE CWD NNR) and Jiangmen CWD PNR in the pilot area of Zhuhai and Jiangmen Coastal Waters, and Xiamen Rare Marine Species NNR (Xiamen RMS NNR) in the pilot area of Xiamen Bay, as presented in Table 01. The project proposes two pilot villages: Sanniangwan Village, next to the proposed Sanniang Bay PNR, and Shanliao Village, next to the Dugong CWD NNR—source: Dr. Xianyan Wang, the local consultant for CPAR4.

Table 01 Project-Areas

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pilot Area | Behai and Qinzhou Coastal Waters | | | Zhuhai and Jiangmen Coastal Waters | | Xiamen Bay Coastal Waters |
| Projent province |  | Guangxi |  | Guangdong | | Fujian |
| Target Nature reserve | Shankou Mangrove NNR | Dugong CWD NNR | Proposed Sanniang Bay PNR | PRE CWD NNR | Jiangmen CWD PNR | Xiamen RMS NNR |
| Project Municipality/city | Beihai | | Qinzhou | Zhuhai | Jiangmen | Xiamen |
| Project County/district | Hepu | | Qinnan | Qi’ao Island | Taishan | Xiamen |

## Background to Capacity-Building

The project documents and progress reports recommend that capacity-building measures adhere to the government-led, local ownership, community participation model of project implementation. National and local marine protection authorities directly participate in and guide the project activities, to ensure that the project can now serve the national and local marine protected area management of crucial strategies and priorities while actively absorbing the surrounding communities of protected areas to participate in project activities, to achieve the coordinated development of protection and socio-economic development.

Adaptation to local conditions is an important principle followed in project work. The project demonstration area involves three provinces and five protected areas, with differences between regions and protected areas. When carrying out the work, it is essential to organize targeted activities according to the different characteristics of each region.

The project addresses existing and potential conflicts between MPAs and adjacent communities in the Qinzhou-Beihai pilot area. By building trust and developing a shared vision for managing natural resources that benefit community members, the GEF alternative aims to turn a threat (unsustainable resource use) into an opportunity (community-based sustainable management of coastal natural resources) that will enhance village livelihoods and conserve biodiversity. Support will be given to build and diversify sustainable livelihoods, with particular attention to supporting women's livelihoods, including, where necessary, the piloting of eco-compensation mechanisms.

Reference is made to the Capacity Development Scorecard (see Annex O part of the Project Document), where some long-established MPAs, such as the Pearl River Estuary CWD NNR, lack Master Plans, and these plans often lack attention to issues such as community-based management, eco-tourism development, and public participation. The following presents a sample from the project docuemnt of capacity building and community engagement indicators.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Indicator 9: Extent of community engagement in MPA conservation:  a) # citizens (disaggregated by gender) participating in actions for MPAs (volunteer marine debris cleans, marine debris surveys, CWD sightings reports by smartphones), voluntary MPA rangers, etc.).  b) # eco-labeled tourism operations (boat operators, tour guides, restaurants, shell-fishers, etc.) - mainly Beihai-Qinzhou  c) # of people (gender disaggregated) benefiting from enhanced and more sustainable livelihoods because of project activities for MPAs | a) 0  b) 0  c) 0 | a) 2 citizen participatory action programs (at least 250 participants, 50% women)  b) Eco-label system established  c) 10 | a) 4 citizen participatory action programs (1000 participants, 50% women)  b) 10 businesses eco-labeled  c) 30 (at least 50% women) | Data sources and Measurements: a) Project office log of the numbers of citizens (men and women) participating in actions for MPAs; b) Log of businesses authorized to use eco-labels; c) project livelihood reports |
| Risks: MPAs fail to move towards community-based management due to institutional barriers  Failure to find a suitable organization (government, private sector, or NGO) to manage/approve the eco-labeling mechanism.  Assumptions: Citizens and businesses want to contribute to improved management of MPAs; more sustainable livelihood options are financially attractive |

It is essential to note that capacity-building measures and livelihood activities often encounter challenges and do not mature at the project level. The main reason is that such measures require substantial human input and financial resources that are not usually available at the project level. While piloting and training local communities, developing skills, and providing incentives to start businesses are often valuable. However, external resource mobilization is required for long-term sustainable solutions. This study focuses on enabling the project to mobilize these external resources. This is the case for the sustainability reporting and issuance of green usufruct bonds. Such measures should be discussed at project management, and its development and maturation are due in two to three years as part of the MPAs administration.

## Stakeholder Mapping and Engagement Plan SEP

The project’s Stakeholders Engagement Plan SEP was part of the approved and disclosed project’s documents in 2018. It was presented as Annex E. Based on the existing SEP. This study shall revisit the roles and responsibilities of the project’s stakeholders.

Visualizing and mapping the relationships among the project’s stakeholders should provide a communication platform for strengthening relations and cooperation among stakeholders. The following stakeholders’ roles analysis is proposed:

* **Key stakeholders** are actors without whose support and participation the targeted results of a project usually cannot be achieved,
* **Primary stakeholders** are actors who are directly affected by the project, either as designated project beneficiaries, because they stand to gain – or lose – power and privilege or because they are impacted by the project in some other way, for instance, if they must be resettled,
* **Secondary stakeholders** are actors whose involvement in the project is only indirect or temporary

The analysis and mapping of project stakeholders' roles and responsibilities is a dynamic process. The stakeholder mapping should be updated throughout the project duration. In addition, the stakeholder mapping should be disaggregated at national and regional levels and for each project component, for example, livelihood activities and others. Table 02 and Figure 01 present examples of the project stakeholders’ roles and responsibilities.

Table 02 Stakeholders Roles and Responsibilities

| **Stakeholder** | **Abbreviation** | **Roles:**  **Key, Primary, Secondary** |
| --- | --- | --- |
| ***National level stakeholders*** | | |
| Ministry of Finance (MoF)  (Website: http://www.mof.gov.cn/index.htm) | MOF | Key |
| Ministry of Agriculture and Rural Affairs (MARA)  Formerly Ministry of Agriculture)  (Website: http://www.moa.gov.cn) | MARA | Primary |
| National Forestry and Grassland Administration (NFGA) (formerly State Forestry Administration)  (http://www.forestry.gov.cn) | NFGA | Key |
| Ministry of Natural Resources (MNR) | MNR | Primary |
| Ministry of Ecology and Environment (MEE; formerly Ministry of Environmental Protection, MEP) | MEE | Key |
| National Development and Reform Commission  https://en.ndrc.gov.cn | NDRC | Primary |
| China Securities Regulatory Commission  http://www.csrc.gov.cn/csrc\_en/index.shtml | CSRC | Primary |
| United Nations Development Programme (UNDP) – China Country Office  (Website: http://www.undp.org) | UNDP-China | Key |
| ***Provincial level stakeholders*** | | |
| Fujian Provincial Department of Forestry | FPDF | Key |
| Guangdong Provincial Department of Forestry | GPDF | Key |
| Department of Forestry of Guangxi Zhuang Autonomous Region | DFGZR | Key |
| ***Pilot area level stakeholders- enforcement agencies*** | | |
| Xiamen Municipal Natural Resources and Planning Bureau | XPDF | Key |
| Zhuhai Municipal Natural Resources Bureau | ZMNRB | Key |
| Jiangmen Municipal Natural Resources Bureau / Ocean Bureau | JMNRB | Key |
| Qinzhou Municipal Forestry Bureau | QMFB | Key |
| Aquatic and Husbandry Bureau of Qinzhou | AHBQ | Secondary |
| Beihai Municipal Natural Resources Bureau / Forestry Bureau | BMNRB | Key |
| ***Pilot area level stakeholders- target MPAs*** | | |
| Xiamen Rare Marine Species NNR | X-NNR | Key |
| Pearl River Estuary CWD NNR | P-CWD NNR | Key |
| Jiangmen CWD PNR | J-CED PNR | Key |
| Hepu Dugong NNR | HD-NNR | Key |
| Shankou Mangrove NNR | SM-NNR | Key |
| ***Pilot area level stakeholders-local communities*** | | |
| Sanniang Bay village (Qinzhou) | Qinzhou | Secondary |
| Shanliao village (Beihai) | Beihai | Secondary |
| Nanwan village (Jiangmen) | Jiangmen | Secondary |
| ***Local and International NGOs*** | | |
| Guangxi Biodiversity Research and Conservation Association BRC | BRC | Secondary |
| WWF-HK  (website: ttp://www.wwf.org.hk) | WWF-HK | Secondary |
| WWF-China  (website: https://en.wwfchina.org) | WWF-China | Secondary |
| ***Local unions and syndicate, academic institutions, media and others*** | | |
| Academic institutions | AI | Primary |
| CWD Conservation Union | CED CU | Primary |
| Local media | LM | Secondary |

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Figure 01 Stakeholder Map at National Level

Secondary stakeholders

Primary stakeholders

Key stakeholders

Project Management at National Level

### National regulations regarding stakeholder communication

The following is a brief review of national regulations governing the stakeholder communication. There is no specific law or regulations for the stakeholder communication at the national level. The 14th Five-Year Plan for Marine Ecological and Environmental Protection is an example, jointly issued by the Ministry of Ecology and Environment (MEE) and six other national ministries in January 2022. The Plan proposes the essential tasks and supports measures in four areas. (1) Improve the laws and regulations and responsibility system of marine ecological and environmental protection, promote integrated land-and-sea governance, strengthen the marine regulatory system and capacity building, and establish a sound marine governance system with a clear division of power and responsibility, multiparty governance, and smooth and efficient operation. (2) Take scientific and technological innovation to make up for the essential and critical support and guarantee and promote the overall improvement of the national, the marine area, and the local marine governance capacity. (3) Promote international cooperation and implement international marine ecological and environmental protection conventions effectively. (4) Strengthen leadership, increase investment, conduct strict supervision and assessment, and strengthen publicity and other organizational guarantee measures.

Source: <https://www.mee.gov.cn/ywdt/hjywnews/202201/t20220117_967330.shtml>

The above example of the National Plan and the practice in China show that not only the GEF program we are implementing but also many other biodiversity conservation programs in MPA in China are being carried out with the perspective of stakeholders, which have received practical guidance and support from all levels of government; hence, its progress in China's MPA has been mainstreamed to some extent.

Research results show that stakeholder activities in MPAs are mainly involved in alternative livelihood, propaganda and education, training, monitoring, and enforcement, and have played an essential role in improving the management effectiveness of MPAs. However, due to the lack of national laws and regulations in this field, the stakeholder perspective is more often indirectly integrated with other laws, regulations, plannings, and relevant government documents, and few MPAs have explicitly addressed the stakeholder subject in their management objectives and plans.

Source: Li Qiuhui, Potential conflicts between coastal MPA planning and fisher livelihoods: Implications to alleviation measures. Master's Thesis. North Bay University- June 2022

## Appeal and Grievance Redress System AGRS

### Background

‘Appeal’ describes proposals and suggestions, while ‘Grievance’ describes a concern, issue, or problem that needs to be addressed. An individual or collective community group may express a grievance. Conflict is a broader term that describes tension at several levels, from low-level disagreements to more escalated and complex situations involving violence.

The evidence that an operational level ‘system’ is an imperative include the requirement for:

* A dedicated pathway (or pathways) and engagement processes for handling appeals and grievances.
* Procedural elements are, for example, documented procedures outlining steps to be taken to prevent and handle community appeals and grievances.
* Records are, for example, complaints/grievance logs and data, evidence of information, and communication about the system or process and outcomes.
* Dedicated resources, e.g., human, and financial resources, formally defined appeal and grievance handling responsibilities.
* Evidence of dialogue with aggrieved parties and use of alternative dispute resolution techniques (e.g., negotiation, mediation, arbitration, etc.) where direct dialogue is not possible or does not lead to resolution of issues; and
* Substantive outcomes, e.g., improved organizational practice and relationships, conflict resolution (validated by aggrieved parties).

Whether the appeal and grievance system is aligned with internationally agreed best practice principles is determined by:

* The process of deciding upon the pathways and procedures to be used
* Whether agreed processes are followed
* The ability of parties to facilitate agreed and sustainable outcomes

The proposed AGRS for the management of MPAs is aligned with the following two principles:

1. Non-Judicial
2. Human-Right Compatible

Non-Judicial

Non-judicial appeal and grievance system, which do not make determinations according to pre-existing legal rules and standards, such as litigation in court. Understanding the difference between judicial and non-judicial systems (including remedies) and recognizing their potentially complementary (rather than mutually exclusive) relationship is essential. Non-judicial grievance resolution can have benefits such as being:

* able to address actual or potential issues before they escalate into conflict or become the subject of litigation
* less constrained by pre-determined legal procedures and precedents, able to hear complaints that do not amount to a course of action in law
* less costly than litigation
* enable management to raise their awareness and learn through direct and facilitated engagement with aggrieved community members
* contribute to earnings and maintain a social license to operate
* more likely to provide an avenue for finding collaborative and innovative solution, and
* enable those whose lives are affected to claim their rights and participate in the process of advancing their rights.

Human-Right Compatible

Rights-compatible grievance resolution means that a system is consistent with international human rights in both process and substance; that is, the procedures followed, and the outcomes reached. In essence, rights compatibility recognizes that an equitable process is necessary for a fair result. A rights-compatible grievance mechanism is based on non-discrimination, equity, accountability, empowerment, and participation, particularly of vulnerable people (for example, some groups of women, children, and ethnic minorities). An effective rights-compatible grievance mechanism can provide a channel through which communities impacted by a project can gain recognition for legitimate concerns and engage in a process to secure acceptable outcomes and share ownership of that process.

### AGRS Objectives

The AGRS is an essential mechanism of the overall project preparation and implementation in the MPAs project management cycle. The following objectives are proposed for the project AGRS.

* Reduce risk and negative social impact: Community complaints and grievance mechanisms can form part of a broader ‘early warning system’ to identify and understand community concerns that could lead to more severe conflict—particularly the impact of economic resettlement changes on local businesses and lifestyles.
* Establish and maintain a social license to operate the Village Committees. Where local communities expect economic resettlement and eco-compensation schemes, other livelihood activities will avoid social harm, minimize adverse impacts, maximize benefits, and respond to their appeals and grievances respectfully and systematically, using processes that the communities know and trust.
* Utilize the AGRS to assess the risk of economic displacement at specific project sites, evaluate the need for targeted Livelihood Action Plans, and define their scope. Where the livelihood action plan is presented to local businesses and communities, and they are encouraged to provide their appeal, ideas, and complaints through the AGR System.

In addition, appeal and grievance redress systems often receive a broad spectrum of grievances, proposals, and ideas from affected communities. These are not necessarily caused or related to the project or the MPAs Administration. The first step here is to reply to the complainants and explain whether their appeal or grievance will be considered or rejected, the reason for rejection, and probably advice on where to follow up on the rejected grievances.

### Benefits of AGRS

A properly designed and implemented appeal and grievance system can benefit both the MPAs Administration and communities involved (i.e., Affected Persons/Entities) by increasing the likelihood of resolving minor disputes quickly, inexpensively, and relatively (i.e., solutions that reasonably satisfy both sides). The grievance mechanism can also help identify and resolve issues before they are elevated to formal dispute resolution methods, including the courts.

Benefits of AGRS to MPAs Administration

* Provide information about project implementation.
* Provide an avenue to comply with government policies.
* Provide a forum for resolving grievances and disputes at the lowest level.
* Resolve disputes relatively quickly before they escalate to an unmanageable level.
* Facilitate effective communication between the projects and affected persons.
* Help win the trust and confidence of community members in projects and creates productive relationships between the parties.
* Ensure equitable and fair distribution of benefits, costs, and risks.
* Mitigate or prevents adverse impacts of the project on communities and produce appropriate corrective or preventive action.
* Help avoid project delays and cost increases and improves the quality of work.

Benefits of AGRS to Affected Communities

* Provide a cost-effective method to report their appeals, grievances, and complaints.
* Establish a forum and a structure to report their grievances with dignity and access to a fair hearing and remedy.
* Provides access to negotiate and influence decisions and policies of the project that might adversely affect them.
* Facilitate access to information.

### AGRS Guiding Principles

The MPAs-AGRS aligns with the requirements of UNDP's two generic documents, namely:

UNDP Guidance Note, UNDP Social and Environmental Standards (SES) Stakeholder Engagement-Supplemental Guidance: Grievance Redress Mechanisms-2017

<https://info.undp.org/sites/bpps/SES_Toolkit/SES%20Document%20Library/Uploaded%20October%202016/UNDP%20SES%20Supplemental%20Guidance_Grievance%20Redress%20Mechanisms.pdf>

And IFC Good Practice Note-Addressing Grievances from Project-Affected Communities-2009 <https://info.undp.org/sites/bpps/SES_Toolkit/SES%20Document%20Library/Uploaded%20October%202016/UNDP%20SES%20Supplemental%20Guidance_Grievance%20Redress%20Mechanisms.pdf>, and best international practices in the field, which requires that the non-judicial grievance mechanism should be:

* appropriate to the magnitude of impacts and risks caused by the project;
* communicated to all likely affected people, local communities, and stakeholders as early as possible in the engagement process;
* accessible to all affected people/entities, including vulnerable groups, without cost, in a language they can comprehend and report in, and in the easiest and fastest mean possible;
* enable affected persons to raise grievances in confidence and without prejudice;
* not obstructing aggrieved persons' access to judicial or administrative processes;
* address grievances promptly and in a manner that is transparent, ethical, lawful, rights-based, and understandable to the affected party;
* record in writing all appeals and grievance details from the moment of the voicing out of the grievance until the complete implementation of agreed actions up to the satisfaction of the aggrieved person/entity. This includes the date and nature of the appeal or complaint, and any follow-up actions taken, the final decision and how this was communicated to the stakeholder; and
* allow the affected person/entity to redirect the unresolved grievance through a formal route to external or neutral experts.

### National Grievance Redress Regulation

The project AGRS should be aligned and in fulfillment of the following national grievance redress regulations:

**Article 7 of Nature Reserve Regulations of the People's Republic of China**

People's governments at or above the county level shall strengthen the leadership of the work of nature reserves. All units and individuals should protect the natural environment and natural resources in nature reserves and have the right to report and accuse units and individuals who destroy or encroach on nature reserves.

Source: <http://www.gov.cn/zhengce/2020-12/26/content_5575048.htm> Regulations of the People's Republic of China on Nature Reserves

**Article 3 of Marine nature reserve management measures**

Any unit or individual should protect the marine nature reserve and have the right to stop and report encroachment on the marine nature reserve.

Source: <https://www.mee.gov.cn/ywgz/fgbz/gz/200609/t20060913_92771.shtml> Measures for the Management of Marine Nature Reserves

**Litigation of marine civil prosecution**

Procuratorial organs should fully respect the priority status of the relevant administrative organs in the field of public welfare protection of marine natural resources and ecological environment in the performance of their duties and actively play the procuratorial function to support the relevant administrative organs to file lawsuits for compensation for damage to marine natural resources and ecological environment. If the maritime regulatory authority does not timely file a damage compensation lawsuit, the procuratorial authorities can urge it to prosecute according to law; when there is still no lawsuit filed after urging, the procuratorial authorities can file a public interest litigation of marine civil prosecution.

In principle, for the same marine pollution and ecological damage, when the natural resources and ecological damage lawsuit, as well as the civil public interest lawsuit for the marine environment, are separately filed, the same trial organization shall first hear the ecological damage lawsuit and then hear the public interest litigation case not covered by the previous case.

China's marine ecosystem is under double the pressure of development and land-and-sea pollution, and problems such as offshore pollution, illegal fishing, illegal sea reclamation, and offshore oil spills still exist. Article 89, paragraph 2 of the Marine Environmental Protection Law stipulates that the marine environmental supervision department has the right to represent the state and file lawsuits for damages against those responsible for damaging marine ecology, marine aquatic resources, and MPAs. In July 2017, the procuratorial public interest litigation system was formally established; in February 2019, the Supreme Prosecutor was deployed to carry out "guarding the sea," a particular supervision activity of procuratorial public interest litigation. Since then, the coastal procuratorial organs at the provincial level have actively played the functions around the irregular setting of outfalls into the sea, insufficient prevention and control of pollution from land-based sources, the implementation of marine pollution prevention and control measures not in place, the marine ecological protection and restoration work lagging, the marine environment supervision and management system not fully implemented, etc., and has handled several influential and typical procuratorial cases of public interest litigation.

Source: <https://www.spp.gov.cn/spp/llyj/202012/t20201221_489490.shtml>

**Other complaint and grievance channels**

1. The online channel of the State Bureau of Letters and Visits: It refers to the activities of citizens, legal persons, or other organizations reflecting the situation, putting forward suggestions, opinions, or complaints through platforms such as government websites, mailboxes, mobile clients, and WeChat subscriptions, which are handled by relevant organs according to the law.
2. Twelve thousand three hundred forty-five government service hotlines: It accepts all kinds of non-emergency requests from enterprises and the public, including consultation, requests for help, complaints, reports, and suggestions in the fields of economic regulation, market supervision, social management, public services, ecological and environmental protection, etc.
3. Twelve thousand three hundred sixty-nine environmental protection hotlines: It means that through the environmental protection hotline, the public can report to the authoritative ecological and environmental departments at all levels the issues, including environmental pollution, ecological damage, and other violations of ecological and environmental laws, regulations, rules, and relevant provisions, requesting the authorities to deal with the issues following the law.

### Institutional Functions of the AGRS

During the implementation of MPA-projects' activities, the MPAs-Administration will be responsible to:

* provide information and services to resource persons, as required by the AGRS, to deal with the reported appeals and grievances;
* register appeals and grievances using a prescribed AGRS-Template;
* document AGRS proceedings, decisions, and recommendations;
* maintain the appeal and grievance-related documents and reports;
* facilitate arrangements for field visits; and
* present timely feedback to affected persons and agencies involved in appeals and grievances.

It is worth noting that other grievance systems are already in operation by line ministries, for example. The proposed AGRS shall not undermine nor contradict the existing grievance systems.

### Work Processes of the AGRS

The typical steps in the appeal and grievance redress system proposed by MPAs-Administration can be tailored to the project area and context. The main work processes are seven layers explained in detail in Figure 02 exhibiting the proposed generic work processes for the AGRS.

1. Receive and register an appeal or a grievance
2. Acknowledge, Assess, Assign
3. Develop a proposed response
4. Communicate the proposed response to the complainant and seek agreement on the response
5. Implement the response to resolve the grievance
6. Review the response if unsuccessful

**AFFECTED PERSON/ENTITY**

**SHARED A GRIEVANCE**

**MPAs-ADMINISTRATION**

**RECEIVED & VALIDATE THE GRIEVANCE**

**MPAs-ADMINISTRATION**

**ADDRESS THE GRIEVANCE**

**MPAs-ADMINISTRATION COMMUNICATE WITH VILLAGE COMMITTEE FOR FURTHER VERIFICATION OF THE GRIEVANCE**

**AGRS-MONITORING PERFORMANCE INDICATORS FOR THE PUBLIC**

**AGRS-MONITORING PERFORMANCE INDICATORS FOR THE MPAs-ADMINISTRATION**

**MPAs-ADMINISTRATION**

**DOCUMENT AND REPORT IN DASHBOARDS**

Figure 02 AGRS Work Processes

### AGRS-Database

The proposed AGRS establishes and maintains a database of all appeals and grievances received, related communications, and the actions implemented to address/resolve them. Each appeal and grievance record in the database shall include at least the following:

* The appeal or grievance that the complainant has raised;
* Appeal/Grievance submission date;
* Aggrieved person/entity (i.e., complainant) name and contact details; (optional);
* Details on proposed corrective/remedial action (and options) communicated to the complainant;
* Date of response from a responsible entity (Contractor, PMT as per the responsibility matrix);
* Details on agreed corrective/remedial action(s) and response, along with signed agreement number and date and a scanned copy of the agreement;
* Details on implemented corrective/remedial action(s) and response;
* Record of any further correspondence between the complainant and the responsible entity;
* If further actions are required (e.g., compensation, court action, etc.);
* Grievance closing out date; and
* Periodical grievances logs and reports.

### Capacity Building and Training for AGRS

The Administration of the MPAs should carry out workshops designed based on an adult-participatory learning curriculum and will include group work, play-role exercises, and case studies. The workshops should be targeted at Village Committees and local businesses.

The workshops shall introduce the AGRS to the participants, present its objectives and purpose, assure the public of its privacy and confidentiality, and run the system with mock-up data. The AGRS can be accessed online by local communities AGRS focal points at the Village Committee level are also available to receive appeals and grievances in person and through all means, such as email or other communication venues available to local communities.

### Advocacy for the AGRS

MPAs-Administration should widely publicize the AGRS and coordinate with local Village Committees to spread awareness of the AGRS and its availability and advantages. An effective awareness campaign based on public understanding of the roles and functions of the AGRS should include the following elements:

* scope of the MPAs activities
* purposes for which the AGRS can be utilized, e.g., loss of businesses,
* types of grievances not acceptable to the AGRS
* accessibility and confidentiality of the AGRS
* how complaints can be reported to those AGRS and to whom these complaints should be forwarded and how, e.g., projects billboards, hotlines, phone and facsimile numbers, social media outlets, postal and email addresses, and websites of the AGRS, including information that should be included in a complaint
* procedures and time frames for initiating the grievance redress process
* anticipated time frame to achieve resolution
* boundaries and limits of AGRS in handling grievances; and
* roles of different agencies in the management of MPAs.

### Monitoring and Evaluation of AGRS

The AGRS monitoring and evaluation exercise aims to assess whether the AGRS is legitimate, accessible, predictable, equitable, and transparent. Where the characteristics of a good AGRS are:

* is known to the public and affected persons (APs),
* has a systematic way of recording and monitoring the progress of the resolution of issues,
* is accessible to all APs irrespective of their economic status, literacy level, gender, ethnicity, disabilities, geographical location, etc.,
* includes participation, representation, and consultation of APs in its design, planning, and operational processes,
* provides security (both physical and psychological) for APs to participate without fear of intimidation or retribution,
* has respect for the dignity and self-esteem of Aps,
* provides equitable access for APs to information, advice, and expertise,
* has a reasonable time frame that prevents grievances from dragging on un-resolved,
* evidence of social and cultural appropriateness of the systems, approaches, and methods adopted,
* possesses values, attitudes, and commitment to fairness and justice,
* shows transparency, accountability, and objectivity in conducting grievance redress processes and realizing their outcomes,
* is independent and has a clear governance structure with no external interference with the conduct of grievance redress processes and reaching agreements,
* shows respect for the freedom of APs to opt for alternative grievance redress systems if they so decide,
* compliance with existing grievance systems without undermining them, and
* has flexibility in decision-making processes, considering grievances' unique and diverse character.

Table 03 provides a generic set of questionnaires that can be addressed and discussed during the AGRS monitoring and reporting exercise.

Table 03 AGRS Monitoring and Reporting

| **Topic** | **Questions** |
| --- | --- |
| **Organization** | |
| **Ownership** | Is grievance redress integrated into the project’s core activities? |
| Is grievance redress integrated into staff job descriptions and responsibilities? |
| Is it appropriately resourced and monitored? |
| **Principles** | |
| **Legitimacy** | Does the AGRS operate independently of interested parties? |
| Is the AGRS widely perceived as independent? |
| **Accessibility** | Is the AGRS accessible to all stakeholders? |
| Are procedures to file grievances and seek action easily understood by project beneficiaries and impacted communities? |
| Can grievances be filed anonymously? |
| Is the AGRS appropriately advertised and communicated to project-affected communities? |
| **Predictability** | Is the AGRS responsive to the needs of all complainants? |
| Does the AGRS clarify the types of results it can (and cannot) deliver? |
| **Fairness** | Are grievances treated confidentially, assessed impartially, and handled transparently? |
| **Rights Compatibility** | Does it restrict access to other AGRS? |
| Are the AGRS outcomes consistent with applicable national and international standards? |
| **Transparency** | Are the AGRS procedures and outcomes transparent enough to meet public interest concerns? |
| **Capability of Staff** | Are there dedicated and trained staff available to handle the AGRS? |
| Are they given learning opportunities, and do they receive systematic performance reviews? |
| **Processes** | |
| **Acknowledgment and Follow-up** | Are complaints acknowledged in writing? |
| Is there a clear timetable for that area publicly available? |
| **Verification,**  **investigation and**  **actions** | Is action taken on every grievance? |
| Are investigators neutral, or do they have a stake in the outcome? |
| **Monitoring &**  **Evaluation** | Are there indicators to measure grievances monitoring and resolution? |
| Is the data being collected, is the data used to make policy and/ or process changes to minimize similar grievances in the future? |
| **Feedback** | Does a user survey exist to get feedback on the credibility of the process? |
| Is there a right to appeal? If yes, are AGRS users informed about this, right? |
| **Analysis** | Is there a process/set of indicators to analyze the effectiveness of the AGRS? |

### Risk Management of the AGRS

The project's Risk Monitoring Matrix shall report on the AGRS risks and their mitigation measures. Where,

the AGRS should serve as a safe and objective venue for local community members to echo and pursue their appeals and grievances. The costs of ignoring such conflicts—or responding too late—are high. An effective grievance mechanism's core characteristic is identifying minor community incidents before they escalate into unmanageable disputes. In many instances, the grievance process can provide the opportunity for resolution via independent mediation or alternative dispute resolution versus a lengthy court proceeding or compliance investigation.

Complaints often leak to media before reaching the right AGRS channel, resulting in public discomfort and even taking political nature. Inviting the national and local media institutions during the AGRS awareness campaign is recommended to familiarize them with the mechanism and promote its utilization among local communities.

In specific locations, communities are distant from the public sector and its services, and there could be a communication gap and mistrust. Complainants might fear retribution by public sector utilities and decline to place their grievances due to this reason. MPAs-Administration shall demonstrate and share publicly grievances and how they are addressed with confidentiality and objectivity.

Grievances initiated by women individuals and groups shall be addressed effectively, considering the local cultural perspective.

### AGRS Dashboard Reporting

The generic AGRS-Template, Figure 03 is the main template to record the actions of an appeal or a grievance. The template serves as a grievance entry and grievance-management record. The template covers in detail the following:

* Complainant Information
* Complain Registration Number per project area
* Type of complainant
* Mode of receiving the grievance
* Location of the problem/issue specified in the complaint
* Type of problem/grievance
* Brief description of the problem
* Brief description of the factors causing the problem
* Assessing the severity of the complaint
* Actions taken by the Receiving Office
* Satisfaction of Complainant
* Attachments

The generic AGRS-Template, can be published in a Smartsheet-web-based system that provides real-time reports and monitoring dashboards, as shown in Figures 03 and 04 At the project area and regional levels. The AGRS has a database for two performance indicators published in separate dashboards and accessed by different stakeholders. The first indicators are for knowledge sharing with the project stakeholders, including Village Committees and local businesses and communities. The following are proposed set of operational performance indicators:

* Number of complaints by gender
* Number of complaints by age group
* Number of grievances per quarter
* Total number of received grievances
* Total number of resolved grievances
* Duration to reach grievance-resolution
* Percentage of resolved to received grievances
* Number of grievances per project area
* Type of grievance/problem

The AGRS database has a second set of performance indicators for management review and reporting to the senior Administration of the MPAs. The following is the proposed set of management performance indicators:

* Required administrative level to resolve grievances by project area
* Number of grievances that reach court
* Costs of resolving grievances
* The average cost to resolve a grievance
* Percentage of satisfied complainants with the proposed resolutions

Table 04 AGRS-Template

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MPAs-Appeal and Grievance Redress Template** | | | | | |
| **Appeal/Complainant Information (Person/Entity Reporting)** | | | | | |
| **First Name (Optional)** | | **Middle Name (Optional)** | | **Family Name (Optional)** | |
| **Tel (Optional)** | | **Email (Optional)** | | **Address (Optional)** | |
| **Age group: (Optional)**   * Less than 18 * 19-40 * 41-60 * More than 60 | | **Sex: (Optional)**   * Male * Female | | **Ethnicity: (Optional)** | |
| **Complaint registration number and date** | | | | | |
| Registration Number: | | | | | |
| Date: | | | | | |
| **Type of complainant** | | | | | |
| Affected person/s (AP) | Entity | | Village Committee | | NGOs |
| **Mode of receiving the grievance** | | | | | |
| Letter | | In-person | | Through Village Committee | |
| Hotline | | Phone Application | |  | |
| Email | | Facsimile | |  | |
| Others (Please specify) | |  | | | |
| **Location/Address of the problem/issue specified in the complaint**: | | | | | |
| Fujian | | Guangdong | | Guangxi | |
|  | |  | |  | |
| **Type of problem/grievance:** | | | | | |
| Land acquisition | | Gender inequity | | Water flooding | |
| Evacuation | | Eco-compensation | | Wastewater pollution | |
| Loss of livelihood | | Eco-Tourism | | Solid waste pollution | |
| Change of livelihood characteristics | | Issuance of Green Bonds | | Air pollution | |
| Change of Livelihood location | | Training | | Noise | |
| Others (Please specify) | |  | | | |
| **Brief description of the problem:** | | | | | |
|  | | | | | |
| **Brief description of the factors causing the problem:** (from the complainant's perspective) | | | | | |
|  | | | | | |
| Project/Person/agency responsible for causing the problem: | |  | | | |
| Past action/s taken by the complainant (if any): | |  | | | |
| **Assessing the severity of the complaint** | | | | | |
| Potential impact on the well-being of an individual or group | |  | | | |
| Potential impact on the project | |  | | | |
| Public profile of the problem | |  | | | |
| Reasons for rejection of a grievance, if any: | |  | | | |
| Details of the MPAs -Officer that received the grievance: | |  | | | |
| **Grievance Resolution** | | | | | |
| **Actions taken by the Receiving Office** | | **Actions taken by the Receiving Office** | | | |
| Description of Action:(Evidence) | |  | | | |
| Name of the acting person | |  | | | |
| Resolution of the grievance | | Satisfied | | Not Satisfied | |
| Satisfaction of Complainant: | |  | |  | |
| Final Resolution:(Evidence) | |  | | | |
| Duration to reach a final resolution in weeks: | |  | | | |
| Level of required authority to resolve the grievance | |  | | | |
| Estimated cost to resolve the grievance | |  | | | |

Figure 03 AGRS Public-Dashboard

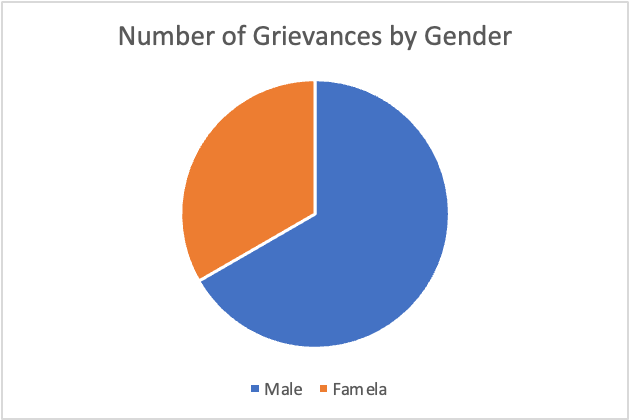
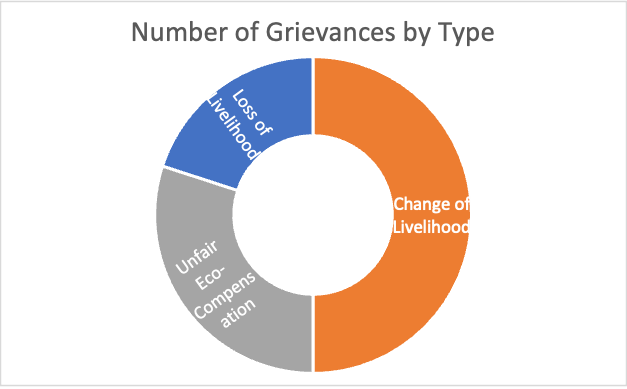
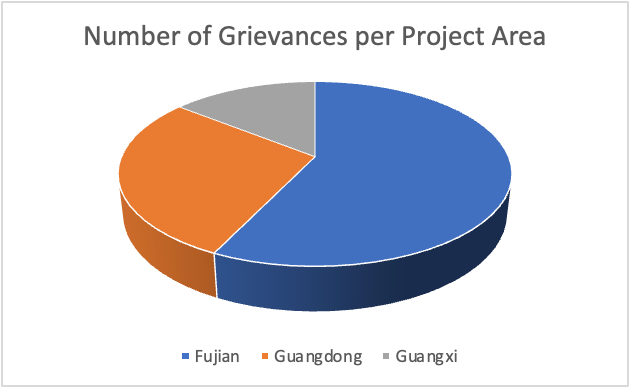
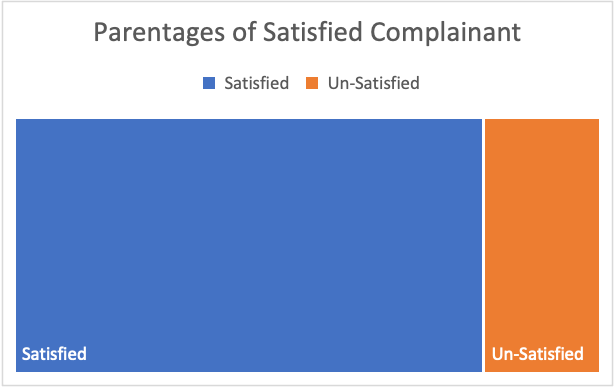
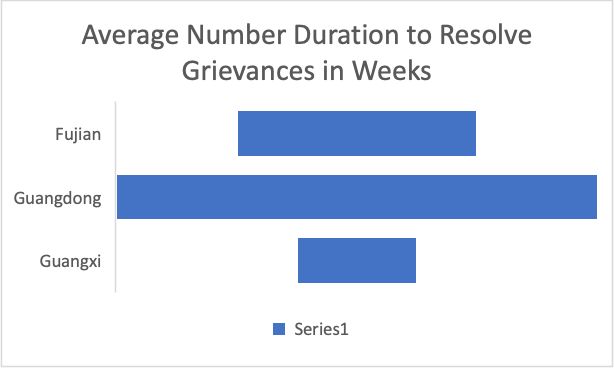
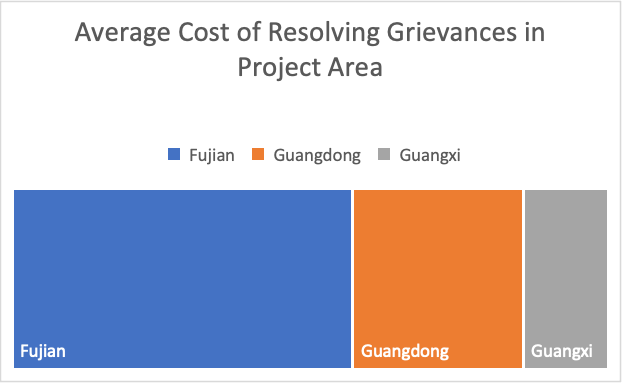


Figure 04 AGRS Management-Dashboard



## Disaster Response Plan DRP

The MPA Administration should develop a disaster response plan as part of the project management of MPAs at regional and national levels. The plan must be part of the national and institutional institutions responsible for emergency responses in the MPAs area. In addition, the plan should be introduced as part of the MPAs framework to mitigate climate impact on MPAs. The following is the general background and institutional review of DRP in China, focusing on climate impact and marine protected areas.

### Background

The country's geography can be generally divided into four regions. The Southern region consists of hilly terrain and the Yunnan-Guizhou Plateau. The Northern region consists of low-productivity plains and deserts. The Western Region consists of high-altitude plains and mountains in Tibet's Autonomous Region, and the Eastern region, which can be sub-divided into the Central Plain, North Plain, and Northeast Plain, consists of alluvial plains of the Yangtze and Yellow Rivers, and a densely populated coastline.

China's vulnerability to climatic hazards is high. Annual losses due to natural hazards average $76 billion, and around one-third of China's agricultural land is affected by natural hazards such as storms, droughts, floods, land subsidence, and landslides. China's Nationally Determined Contribution (2016) sets out a solid commitment to transitioning to a sustainable and resilient low-carbon economy. In 2020, China acknowledged its aim to peak CO2 emissions before 2030 and achieve carbon neutrality by 2060.

China's Third National Communication to the UNFCCC (NC3) (2018) identifies the impacts of climate change in areas such as agriculture, water resources, ecosystems, coastal areas, and human health as priority concerns. This document aims to summarize the climate risks faced by China briefly. This includes rapid onset and long-term changes in key climate parameters and the impacts on communities, livelihoods, and economies, many of which are already underway.

China faces significant disaster risk levels and is ranked 71st out of 191 countries by the 2019 Inform Risk Index 32. This ranking is driven strongly by the exposure component of risk. China has very high exposure to flooding (ranked jointly 13th), including riverine, flash, and coastal, and very high exposure to tropical cyclones and their associated hazards (ranked 6th). Drought exposure is proportionately lower but still significant (ranked jointly 55th). Disaster risk in China is also elevated by its moderate levels of social vulnerability, and the country's net risk score is significantly offset by its strong coping capacity. The following are observations of climate impacts on the natural environment:

* Increases in annual maximum and minimum temperatures are projected to be larger than the increase in average temperature, increasing the potential health, livelihood, and ecosystem risks of global warming.
* The impacts of hazards and sustained changes will not be equally distributed. They will likely be experienced most strongly by marginalized and asset-poor communities.
* Hazards such as droughts, floods, and heatwaves are all expected to increase in probability, and increased loss and damage will be difficult to avoid without significant adaptation efforts.
* There is a very significant threat to biodiversity and natural resources. Without careful planning, adaptation efforts may only exacerbate this threat and the challenges faced by communities most dependent on natural resources.
* Support for adaptation will be needed by many groups, particularly smallholder farmers who face potential yield losses and species range shifts.
* China's enormous population of vulnerable and undernourished people will experience increased pressure from climate drivers, particularly in coastal urban conurbations, regions facing dryland expansion, and where livelihoods depend on outdoor manual labor.
* Carrying out Disaster-reduction Projects and Improving Capability in Comprehensive Prevention of Disasters, including flood control, drought combat, earthquake prevention and relief, cyclone control, red tide and other marine disaster prevention, desertification and sandstorm control, and ecological construction.

Source: Source National Security, Civil Affairs, People's Republic of China 中华人民共和国民政部(2007). Emergency Response Law of the People's Republic of China (中华人民共和国突发事件应对法). Available at: <http://english.gov.cn/archive/laws_regulations/2014/08/23/content_281474983042515.htm> [Accessed 8 May 2016].

### Climate Impact on Coastal Zone

Sea-level rise threatens significant physical changes to coastal zones around the world. The IPCC's Fifth Assessment Report estimated Global mean sea-level height in the range of 0.44 meters (m)–0.74 m by the end of the 21st century. Approximately 11.4% of China's population lives in low-elevation coastal areas. Critical areas of vulnerability include the Pearl and Yangtze River deltas. China's NC3 reports rates of sea-level rise, which are higher than the international average, recorded at 2.6 mm/year between 1980 and 2010. In many areas, the relative rate of sea-level rise is further increased by the contribution of human development-linked subsidence. A direct impact of this has been an acceleration of coastal erosion rates, saltwater intrusion, and increased risk from storm surges. These phenomena are all expected to worsen under all climate change scenarios, increasing the risk faced by coastal populations and putting strain on coastal defense infrastructure. In addition, Levels of risk in China are driven up significantly by the size of the population exposed to natural hazards and climate change impacts. For instance, ADB (2015) reports that an estimated 11.4% of the population lives in low-elevation coastal zones.

The impact and coping strategies of populations depend heavily on their socioeconomic status, sociocultural norms, access to resources, poverty, and gender. Research has also provided more evidence that the effects are not gender-neutral, as women and children are among the highest-risk groups. Key factors that account for the differences between women's and men's vulnerability to climate change risks include gender-based differences in time use, access to assets and credit, treatment by formal institutions, which can constrain women's opportunities, limited access to policy discussions and decision making, and a lack of sex-disaggregated data for policy change.

With years of experience in disaster reduction and relief work, the Chinese government has established a disaster reduction and relief mechanism for the nation's situation. It has established a series of disaster emergency mechanisms, including a disaster emergency response system, disaster information release mechanism, emergency relief materials reserve system, disaster early warning, consultation, and information sharing system, immediate disaster rescue and relief joint coordination mechanism, and emergency social mobilization mechanism. Local governments at various levels also have similar working mechanisms.

### Current Situation

China has several national documents for disaster response at the national level, for example, the Emergency Response Law of the People's Republic of China, the National Comprehensive Fire and Rescue Team Construction Plan, the National Natural Disaster Prevention and Control Plan, the Emergency Management System Construction Plan, etc. In addition, there are many provincial and municipal disaster response documents covering different types of disasters and regions.

Emergency management functions of the government for natural disasters, the Ministry of Natural Resources (MNR), and the Ministry of Emergency Management (MEM) are responsible for parts of that. The MNR is responsible for technical support, prevention, monitoring, and early warning, such as establishing a national information platform for geological disasters. The MEM is accountable for organizing and building rescue forces nationwide and promoting social participation. There is also a Climate Change Department under the MEE, mainly responsible for addressing climate change and greenhouse gas emission reduction, without an explicit climate change emergency management function.

The characteristics of China's emergency management (not limited to natural disasters)

1. The emergency management system is government-led, with corresponding agencies and departments responsible for emergency response at all levels. Government plays an essential role in decision-making, coordination, and command in emergency management and improving emergency response capability by formulating emergency plans and organizing drills.
2. The emergency management system is a comprehensive response. It includes emergency rescue, prevention, monitoring, early warning, etc. For example, regarding natural disaster prevention, China strengthens meteorological and earthquake monitoring and building earthquake-resistant facilities.
3. Emergency management emphasizes socialized participation and encourages active public involvement. For example, during the fight against the new COVID-19 epidemic, many volunteer service teams were established nationwide to provide supplies, medical treatment, and other assistance to people affected.
4. Emergency management widely applies new information technology. China's emergency management has adopted big data, artificial intelligence, and other technical means to improve emergency response efficiency. For example, in the COVID-19 epidemic prevention and control, China used big data to achieve case tracking and medical resource allocation.

General responsibilities of the MNR in emergency management

(1) Undertake the technical support work of geological disaster emergency rescue;

(2) Conduct marine observation and forecasting, monitoring and early warning, and disaster mitigation; and participate in the emergency response to major marine disasters.

General responsibilities of the MEM in emergency management

1. Organize the preparation of the overall national emergency preparedness plans and planning, guide all regions and departments in response to emergencies, and promote the construction of the emergency planning system and the plan exercises.
2. Establish a disaster reporting system and release disaster information; coordinate emergency forces reserve materials and unified dispatch in disaster relief; coordinate emergency forces and stockpile relief supplies for unified dispatch in disaster relief; construct disaster relief system, guide the emergency rescue of production safety and natural disaster, and undertake the work of the "National Command for severe disasters." Guide the prevention and control of fire, flood, drought, geological disasters, etc. Supervise and manage production safety.
3. After the institutional reform in 2018, the public security fire brigade, armed police forestry force, safety production, and other emergency rescue teams are the backbones of emergency response. They are unified under the management of the MEM.
4. The MEM should deal with the relationship between disaster prevention and disaster relief, clarify the division of responsibilities with relevant departments and local administrations, and establish a mechanism for coordination and cooperation.

Source:

<http://www.gov.cn/zhengce/content/2022-02/14/content_5673424.htm>

<http://www.gov.cn/zhengce/zhengceku/2013-11/08/content_1077.htm>

<http://www.gov.cn/zhengce/zhengceku/2023-01/04/content_5734957.htm>

<https://www.mem.gov.cn/gk/zcjd/202211/t20221103_425698.shtml>

<https://www.mem.gov.cn/gk/zcjd/202211/t20221103_425698.shtml>

Notice of the MEM on the Construction of 14th Five-Year Plan Emergency Rescue (ER) Force

June 22, 2022- Excerpts related to natural disasters response

The emergency rescue forces in this plan refer to the professional, social, and grassroots rescue forces involved in production safety accidents and natural disaster emergency rescue. Professional emergency rescue forces mainly include flood rescue, local forest (grassland) firefighting, earthquake and geological disaster rescue, production safety accident rescue, and aviation emergency rescue. Social emergency forces are social organizations and emergency volunteers engaged in disaster prevention, mitigation, and relief, as well as organizations managed by enterprises and institutions engaging in related activities. A grassroots emergency rescue force refers to the rescue team organized by township streets, villages, and communities, which is formed and engaged in the region's disaster prevention and emergency response.

China's natural disasters are frequent, the risk of the accumulated and new security is still high, and extreme weather disasters have entered a period of recurrence. However, the foundation of disaster prevention and mitigation is weak, and the level of emergency rescue forces is unbalanced and inadequate. In terms of emergency rescue capacity, existing flood rescue, local forest (grassland) firefighting, earthquake and geological disaster rescue, and other professional rescue capacity cannot meet the needs of complex disaster rescue; social emergency forces and grassroots emergency rescue forces are still in their infancy; the number of new rescue forces such as aviation rescue, engineering rescue, survey, and security is insufficient.

Main Objectives

1. ER, force gradually optimized. The professional, social, and grassroots emergency rescue forces at the national and provincial levels shall be gradually improved to achieve effective synergy with the national fire rescue team.

(2) Force layout more reasonable. The scope of a national-level professional ER force shall basically cover the regions with major disasters and accidents that happened in the last 20 years and regions with new high-risk probability; the layout of aviation ER force shall cover disaster-prone areas.

(3) Professional capacity effectively enhanced. The rescue capabilities and professional command need to be improved in special areas, in complex conditions, and in extreme environments; the level of intelligence, lightness, modularity, and standardization in terms of ER equipment shall continue to enhance, and the level of human-equipment synergy shall enhance significantly.

(4) Logistic system steadily improved. The system and standard norms of ER force composed of operations and management, training and assessment, scientific and technological support, career security, honor, and incentive shall further improve; the coordination and linkage mechanism shall be improved, with rescue resources shared and the level of joint training and combat further enhanced.

The top 2 main objectives of the 14th Five-Year Plan

1. The coverage of national professional ER team in high-risk areas induced by earthquakes and geological and flooding shall be greater than or equal to 90%.
2. The coverage of a national professional ER team in high-risk areas induced by forest (grassland) fire shall be greater than or equal to 90%.

Here the team coverage rate = the intersection area of the circular area formed by a radius of 500km with the focused area of the disaster accident/ the focused area of the disaster accident.

Source: <https://www.mem.gov.cn/gk/zfxxgkpt/fdzdgknr/202206/t20220630_417326.shtml>

Notice of China National Commission for Disaster Reduction on the Construction of 14th Five-Year Plan National Comprehensive Disaster Prevention and Mitigation Plan (June 19, 2022)

To actively promote the modernization of the natural disaster prevention and control system, this plan is formulated following the laws, regulations, and documents such as the "Emergency Response Law of the People's Republic of China," the "Outline of the 14th Five-Year Plan and 2035 Vision for National Economic and Social Development of the People's Republic of China" and the "14th Five-Year Plan" of the National Emergency Response System. Figure 05 presents memberships of China National Commission for Disaster Reduction.

Figure 05 Membership of China National Commission for Disaster Reduction



The achievements in the 13th Five-Year Plan period

1. The natural disaster management system has been optimized. The Central Committee of the Communist Party of China (CCCPC) and the State Council issued "Opinions on Promoting the Reform of Disaster Prevention, Mitigation, and Relief System." The Ministry of Emergency Management (MEM) was established in 2018, and the natural disaster management system with coordination and division of labor was established. The mechanism of consultation and research on disaster risks, the integration of disaster prevention, rescue, and relief, the advanced pre-positioning of rescue teams, and flat command and coordination were further improved. The flood control law, forest law, fire law, seismic safety evaluation regulations, etc., were revised and implemented. The prevention and control of natural disasters legislation was accelerated. Several technical standards of natural disaster emergency plans and disaster prevention, mitigation, and relief were revised and implemented.
2. The capacity of natural disaster prevention and control has been significantly enhanced. Key natural disaster prevention and control projects were organized and implemented. The first national natural disaster risk survey has produced effective results and played an important role. New progress was made in the following three projects: ecological protection and restoration project of "Mountain, Water, Forest, Field, Lake, Grass, and Sand," coastal zone protection and restoration project, and the prevention and control of mega-geological disasters. The level of disaster monitoring and forecasting has been steadily improved, and domestic high-resolution satellites, BeiDou navigation, and other civil space infrastructure have been widely used in disaster prevention, mitigation, and relief.
3. The capacity of disaster relief and rescue has been significantly improved. The disaster management and emergency response capacity has been strengthened in all hazard types and processes, and disaster information has been reported more timely. The system has become more efficient regarding multi-sectoral and cross-regional coordination in monitoring and early warning, primary risk assessment, material deployment, rescue, relief, etc. A five-level disaster relief material reserve system (central-provincial-municipal-county- township) has been built, and the central government has continuously raised the standard of living allowance for natural disasters so that the primary livelihood of the affected people is effectively guaranteed within 12 hours of the disaster.
4. The effectiveness of science propaganda and education is obvious. At important points such as National and National Disaster Prevention and Reduction Day, various forms of publicity and education activities were carried out, and the publicity was introduced into enterprises, rural areas, communities, schools, and families, benefiting an average of 500 million people annually. A network education platform has been established, and public awareness and self-help and rescue skills have been enhanced.
5. International exchanges and cooperation have been fruitful. The implementation of the United Nations 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015-2030, the Shanghai Cooperation Organization, China-ASEAN, and other regional cooperation frameworks have become more practical, and the exchange and cooperation with countries that jointly build the "Belt and Road" have been expanding. In addition, China International Rescue Team and China Rescue Team have participated in international rescue operations actively.

Shortcomings and challenges

In the context of global warming, extreme weather, and climate events frequently occur in China, and natural disasters such as high temperatures, heavy rainfall, floods, and droughts are prone to occur. As urbanization and industrialization continue to advance, the construction of infrastructure, high-rise buildings, urban complexes, water, electricity, oil, and gas pipeline networks accelerates, and the industrial chain, as well as supply chain, become increasingly complex, the exposure, concentration, and vulnerability of various disaster-bearing bodies continue to increase, the multi-hazard clusters and disaster chains become increasingly prominent, and the systemic nature and complexity of disaster risks continue to intensify. In the face of the complex and severe natural disaster situation, there are still shortcomings and deficiencies in China's disaster prevention, mitigation, and relief system, mainly reflected in the following aspects: the coordination mechanism is not sound, the disaster prevention and relief capability are not strong, and the awareness of disaster prevention and mitigation of the whole society is not strong.

Planning Objectives

1. Further improve the coordinated and authoritative system and mechanism of disaster prevention, mitigation, and relief, fully play the role of guidance and coordination of various agencies at all levels, and make progress in legislation on natural disaster prevention and control.
2. More efficient disaster relief and assistance. The basic livelihood of the affected people will be effectively assisted within 10 hours of the disaster, the annual average direct economic loss due to disasters will be controlled within 1% of GDP, the annual average death rate per million people due to disasters will be controlled within 1%, and the annual average number of people affected per 100,000 people will be controlled within 15,000.
3. The level of urban-rural infrastructure and major projects fortification shall be significantly improved; earthquake mitigation, flood and drought control, geological disaster prevention and control, and ecological restoration system shall be more complete.
4. Basically, establish disaster monitoring and early warning platform; further improve the mechanisms of disaster information sharing, joint consultation and research, and early warning response linkage; further improve the accuracy and timeliness of early warning information and the public coverage rate of the information shall reach 90%.
5. Build a national comprehensive natural disaster risk database by types and regions, prepare national, provincial, municipal, and county-level natural disaster risk maps and the prevention and control zoning maps, and enhance national disaster risk assessment capability.
6. Further, establish relevant grassroots organizations, improve the standard system and management of disaster reduction demonstrations, widely carry out propaganda and education, scientifically lay out various disaster prevention and reduction facilities, increase the proportion of people who master the basic skills of emergency escape and rescue, and have at least one disaster information officer in each village (community) in urban and rural areas.

Main Tasks

Promote the modernization of natural disaster prevention and control system

1. Improve the disaster prevention, mitigation, and relief management mechanism.
2. Highlight comprehensive legislation, and improve the system of laws, regulations, and planning standards.
3. Strengthen source control and improve disaster prevention and mitigation planning and guarantee mechanism.
4. Improve social forces and market participation mechanisms.
5. Improve long-term mechanisms of disaster prevention and mitigation and education.
6. Improve international disaster reduction exchange and cooperation mechanisms.

Promote the modernization of natural disaster prevention and control capabilities

1. Construction of disaster prevention and mitigation infrastructure and enhance the bearing capacity of urban and rural engineering.
2. Focus on multi-hazard and disaster chains and strengthen meteorological disaster warning and emergency response mechanisms.
3. Promote accurate, efficient, and orderly rescue capacity building.
4. Optimize structure and layout and guarantee the supply of disaster relief materials.
5. Apply new technologies and conduct talent training, and enhance scientific and technological support for disaster prevention and mitigation.
6. Improve disaster reduction capacity at the grassroots level.

Source: official website of China National Commission for Disaster Reduction [2022] No. 1

Follow Up

The emergency risk communication system in China can be strengthened by:

* The state pays special attention to policy studies and pilot work concerning the insurance industry's role in disaster prevention and reduction. Efforts are made continuously, to sum up the experience of and improve the risk prevention and relief mechanism for agriculture and forestry, which combine natural-disaster insurance and state financial subsidies. Efforts are also being made to set up an overall mechanism to disperse the risks of disasters in the areas of agriculture and forestry and to gradually enhance the ability of the insurance industry to effectively cover the economic loss and damage inflicted by natural disasters.
* China is building a three-dimensional natural disaster monitoring system, including land monitoring, ocean and ocean-bed observation, and space-air-ground observation. A disaster monitoring, early warning, and forecasting system have taken initial shape.
* Disaster remote-sensing monitoring system. Small satellites named Constellation A and Constellation B for environmental disaster-reduction monitoring have been launched. A business application system using the disaster-reduction satellite has taken shape, providing advanced technological support to remote-sensing monitoring, evaluation of, and decision-making for disaster reduction.
  + Marine disaster forecasting system. Oceanographic observation instruments, equipment, and facilities have been renovated. Offshore observation capacity has been enhanced greatly. Buoy observation and cross-sectional survey abilities have been improved as a whole. A batch of marine observation stations has been constructed or renovated. Upgrading of real-time communication systems has been completed at some key observation stations. An observation and evaluation system for sea-air interaction and ocean climate changes has been developed for ocean disaster monitoring closely related to climate changes such as sea level rise, coastal erosion, seawater intrusion, and saline tide.
  + Meteorological early warning and forecasting system. Meteorological satellites FY-1, FY-2, and FY-3 have been put into orbit. A new generation of weather radar installations, totaling 146, has been developed. Ninety-one high-altitude meteorological stations equipped with L-band upper-air meteorological sounding systems have been established, and 25,420 regional meteorological observation stations are in operation. Special meteorological observation networks have been preliminarily built for studies of atmospheric elements, acid rain, sandstorm, thunder and lightning, and agricultural and transportation meteorology. A comparatively complete data forecasting system has been built for early warning of imminent disastrous weather. A meteorological early warning information release platform covering both urban and rural communities has been established, releasing relevant information through radio, television, newspaper, cell phone, and the Internet.
  + Hydrological monitoring and flood early warning and forecasting system. A hydrological monitoring network composed of 3,171 hydrological stations, 1,244 gauging stations, 14,602 precipitation stations, 61 hydrological experiment stations, and 12,683 groundwater observation wells has been completed. A flood early warning and forecasting system, groundwater monitoring system, water resources management system, and hydrological data system have been established.
  + Environment monitoring and early warning system. Work on environment quality monitoring, pollutant monitoring, environment early warning and forecasting, and unexpected environmental accident monitoring has been carried out for objective observation of the pollution of surface, ground, and ocean water, as well as air, noise, solid waste, and radiation pollution. The newly launched HJ-1 environmental satellites A and B carry out efficient, macroscopic, and real-time ecological monitoring and evaluation. A preliminary air-ground environment monitoring structure has been built. To date, there are altogether 2,399 environment monitoring stations with 49,335 technicians in China.
  + Wild animal epidemic sources and disease monitoring and early warning system. A national wild animal epidemic sources and disease monitoring network has been established, with 350 observation stations at the national level, 768 at the provincial level, and over 1,400 at the county level in major natural habitats of migratory birds and other wildlife. Thus, a wild animal epidemic sources and disease monitoring and early warning system has been founded, comprising national, provincial, and county levels.

Source: Integrated Disaster Risk Management of China, Shi, Lie, et al., OECD, 2007

## Sustainability Reporting System

The proposed Sustainability Reporting developed in this study provides an outlook of the project to sustainability reporting at national and international levels. The reporting system has two purposes: the first is for the design of any initiative within the project, such as livelihood initiatives, must meet the expected reporting indicators. The second purpose is for stakeholders interested in investing in the project livelihood activities, where they require such reporting indicators in their profile in the financial market. The proposed reporting system bridges and connect the project indicators (such as SEP, LAP, and AGRS), with the SDG, UN Global Compact, and international sustainability reporting.

The proposed four tiers of reporting encompass reporting on the SDG <https://sdgs.un.org>, the Ten Principles of the UN Global Compact <https://unglobalcompact.org/what-is-gc/mission/principles> and the international sustainability reporting indicators. In addition, the Stakeholder Engagement Plan SEP, the Appeal and Grievance Redress System AGRS, and Livelihood Action Plan LAP have their monitoring and reporting indicators.

### SDG Reporting

The Sustainable Development Goals (SDGs), part of the 2030 Agenda for Sustainable Development adopted by the 193 United Nations (UN) member states, comprise the world’s comprehensive plan of action for achieving

sustainable development. Since the SDGs and the targets associated with them are integrated and indivisible, agriculture, aquaculture, and fishing organizations have the potential to contribute to all SDGs by enhancing their positive impacts or by preventing and mitigating their negative impacts on the economy, environment, and people. The agriculture, aquaculture, and fishing sectors provide food for communities across the world and are best positioned to contribute to Goal 2: Zero Hunger. The sectors are also the world’s biggest employers and the largest economic sectors for many countries, directly impacting Goal 1: No Poverty and Goal 8: Decent Work and Economic Growth.

By managing natural resources sustainably and efficiently (Goal 12: Responsible Consumption and Production),

agriculture has the potential to revitalize rural landscapes, contributing to Goal 15: Life on land. At the same time, the aquaculture and fishing sectors can contribute to healthy marine and aquatic ecosystems, which is Goal 14: Life Below Water. By implementing resilient fishing and farming practices, the agriculture, aquaculture, and fishing sectors can help increase productivity and build the adaptive capacity to respond to climate change (Goal 13: Climate Action). The reporting is proposed for the selected SDG Goals, and Figure 06 presents the SDGs with reference to the Global Reporting Initiative (GRI) <https://www.globalreporting.org>. The GRI is a leading organization in international sustainability reporting. The source of the GRI 13 reporting here is agriculture, aquaculture, and fisheries.

|  |  |
| --- | --- |
| Goal 01: No Poverty | Goal 13: Climate Action |
| Goal 03: Good Health | Goal:14 Life Below Water |
| Goal 05: Gender Equality | Goal: 16 Strong Institutions |
| Goal 11: Sustainable Communities |  |

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Figure 0 SDGs with reference to the GRI 13

### UN Global Compact

The goal of the UN Global Compact is to accelerate and scale the collective global impact of business by upholding the Ten Principles and delivering the SDGs through accountable companies and ecosystems that enable change.

To make this happen, the UN Global Compact supports companies to:

* Do business responsibly by aligning their strategies and operations with [Ten Principles](https://unglobalcompact.org/what-is-gc/mission/principles) on human rights, labor, environment, and anti-corruption; and
* Take strategic actions to advance [broader societal goals](https://unglobalcompact.org/what-is-gc/our-work/sustainable-development), such as the [UN Sustainable Development Goals](https://unglobalcompact.org/what-is-gc/our-work/sustainable-development/sdgs), with an emphasis on collaboration and innovation.

The second tier of reporting is derived from the UN Global Compact. Enterprises are encouraged to commit their businesses to reporting on such principles. Figure 07 presents the relationship between the Principles of the UN Global Compact and the SDG.

The following are the proposed three environmental principles as part of the UN Global Compact <https://unglobalcompact.org>:

* [Principle 7](https://unglobalcompact.org/what-is-gc/mission/principles/principle-7): Businesses should support a precautionary approach to environmental challenges;
* [Principle 8](https://unglobalcompact.org/what-is-gc/mission/principles/principle-8): undertake initiatives to promote greater environmental responsibility; and
* [Principle 9](https://unglobalcompact.org/what-is-gc/mission/principles/principle-9): encourage the development and diffusion of environmentally friendly technologies.

Source: UN Global Compact, WHITE PAPER-The UN Global Compact Ten Principles, and the Sustainable Development Goals, <https://unglobalcompact.org>

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Figure 07 SDG reference to the UN Global Compact

### GRI Sustainability Reporting

International sustainability reporting is the third tier of reporting and is introduced here with an example from the Global Reporting Initiative (GRI). The GRI is an international independent standards organization that helps businesses, governments, and other organizations understand and communicate their impacts on issues such as climate change, human rights, and corruption <https://www.globalreporting.org>. The PMAs Administration can adopt specific indicators and customize them for their reporting.

GRI-Biodiversity 304 defines biodiversity as the variability among living organisms. It includes diversity within species, between species, and of ecosystems. Biodiversity not only has intrinsic value but is also vital to human health, food security, economic prosperity, and mitigation of climate change and adaptation to its impacts. This topic covers impacts on biodiversity, including on plant and animal species, genetic diversity, and natural ecosystems. The following are examples of biodiversity indicators that could be customized for the MPAs administration.

Indicator 1: Habitats Protected or Restored

This reporting refers to areas where remediation has been completed or where the area is actively protected. Areas where operations are still active, can be counted if they conform to the definitions of ‘area restored’ or ‘area protected’.

* Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals.
* Whether partnerships exist with third parties to protect or restore habitat areas distinct from where the organization has overseen and implemented restoration or protection measures.
* Status of each area based on its condition at the close of the reporting period.
* Standards, methodologies, and assumptions used.

Indicator 2: IUCN Red List species and national

Reporting on conservation list of species with habitats in areas affected by operations

The International Union for Conservation of Nature (IUCN) ‘Red List of Threatened Species (an inventory of the global conservation status of plant and animal species) and national conservation lists serve as authorities on the sensitivity of habitat in areas affected by operations and on the relative importance of these habitats from a management perspective.

The total number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations of the organization, by the level of extinction risk:

i. Critically endangered

ii. Endangered

iii. Vulnerable

iv. Near threatened

v. Least concern

### Project Capacity Building Reporting

The following is the fourth tier of reporting addressing the project capacity-building and operation measures, such as the Stakeholder Engagement Plan SEP, the Appeal and Grievance Redress System AGRS, and the Livelihood Action Plan LAP. All the indicators and reporting have been discussed in the relevant section of the project reports.

#### Stakeholder Engagement Plan

The following reporting indicators are proposed for presenting the project’s Stakeholder Engagement Plan and Mapping:

* Enabling active local community engagement and participation in decision-making, particularly those at risk of being left behind;
* Ensuring transparency of programming interventions through the provision of timely, accessible, and functional information regarding supported activities, including potential environmental and social risks and impacts and management measures;
* Ensuring that stakeholders can communicate their concerns and have access to rights-compatible complaints redress processes and mechanisms; and
* Providing effective monitoring—and, where appropriate, participatory monitoring with stakeholders—and reporting on implementing social and environmental risk management measures.

#### Appeal and Grievance Redress System

The reporting aims to present that the AGRS is legitimate, accessible, predictable, equitable, and transparent. Where the characteristics of a good AGRS are aligned to these monitoring and reporting assessment:

* is known to the public and affected persons (APs),
* has a systematic way of recording and monitoring the progress of the resolution of issues,
* is accessible to all APs irrespective of their economic status, literacy level, gender, ethnicity, disabilities, geographical location, etc.,
* includes participation, representation, and consultation of APs in its design, planning, and operational processes,
* provides security (both physical and psychological) for APs to participate without fear of intimidation or retribution,
* has respect for the dignity and self-esteem of Aps,
* provides equitable access for APs to information, advice, and expertise,
* has a reasonable time frame that prevents grievances from dragging on un-resolved,
* evidence of social and cultural appropriateness of the systems, approaches, and methods adopted,
* possesses values, attitudes, and commitment to fairness and justice,
* shows transparency, accountability, and objectivity in conducting grievance redress processes and realizing their outcomes,
* is independent and has a clear governance structure with no external interference with the conduct of grievance redress processes and reaching agreements,
* shows respect for the freedom of APs to opt for alternative grievance redress systems if they so decide,
* compliance with existing grievance systems without undermining them, and
* has flexibility in decision-making processes, considering grievances' unique and diverse character.

#### Livelihood Action Plan LAP

The followings are the LAP reporting indicators that address Vertical Farming, Eco-Tourism, and Eco-Businesses.

##### 6.4.3.1 Sustainability Reporting- Vertical Farming

The following Table 05 presents the Sustainability Reporting indicators for Vertical Farming.

Table 05 Sustainability Indicators-Vertical Farming

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| **Reporting Sustainability Indicators** |
| **Vertical Farming** |
| **Greenhouse Gas Emissions** |
| The agricultural industry generates direct greenhouse gas (GHG) emissions from the processing and transporting goods via land and sea freight operations. Employing innovative technologies that use alternative fuels and energy inputs generated from internal processes—and improving fuel efficiency are ways businesses can limit exposure to volatile fuel pricing, supply disruptions, future regulatory costs, and other potential consequences of GHG emissions. |
| **Reporting Sustainability Indicators** |
| Amount of greenhouse gas (GHG) emissions to the atmosphere of the seven GHGs covered under the Kyoto Protocol—carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3). |
| **Energy Management** |
| Energy consumption contributes to environmental impacts, including climate change and pollution. Energy management affects current and future costs of operation. Climate regulation and other sustainability factors could result in higher and/or more volatile electricity and fuel prices, increasing operating costs for agricultural products. Therefore, energy efficiency gained through process improvements can lower operating costs. The tradeoff between on-site versus grid-sourced electricity as well as the use of alternative energy can play essential roles in influencing both the long-term cost and reliability of a company’s energy supply and the extent of regulatory impact from  direct versus indirect emissions. |
| **Reporting Sustainability Indicators** |
| The total amount of energy consumed per year includes energy purchased from external sources and energy produced by the entity (self-generated). For example, purchased electricity and heating, cooling, and steam energy are all included in the energy consumption scope. |
| The percentage of energy consumed that is renewable energy. Renewable energy is defined as energy from sources that are replenished at a rate greater than or equal to their depletion rates, including geothermal, wind, solar, hydro, and biomass. |
| **Water Management** |
| The agricultural industry relies on water for processing activities, and companies in the industry also typically generate wastewater or effluent. Due to physical availability and/or regulatory access, water availability directly impacts the industry’s ability to operate processing facilities efficiently.  Businesses can manage water-related risks and opportunities and mitigate long-term costs. Through capital investments and assessment of facility locations relative to water scarcity risks, improvements to operational efficiency, and work with regulators and communities on issues related to water access and effluent. |
| **Reporting Sustainability Indicators** |
| The quantity of water was withdrawn from all sources per year in thousands of cubic meters. Water sources include surface water (from wetlands, rivers, lakes, and oceans), groundwater, rainwater collected directly and stored by the entity, and water and wastewater obtained from municipal water supplies, water utilities, or other entities. |
| Quantity of water is withdrawn in locations with High or Extremely High Baseline Water Stress as a  percentage of the total water withdrawn. |
| Risks associated with water withdrawals and water consumption include threats to the availability of adequate, clean water resources, including:  Environmental constraints—such as operating in water-stressed regions, drought, concerns of aquatic  impingement or entrainment, interannual or seasonal variability, and risks due to the impact of climate change.  Regulatory and financial constraints—such as volatility in water costs, stakeholder perceptions and concerns related to water withdrawals (e.g., those from local communities, non-governmental organizations, and regulatory agencies), direct competition with and impact from the actions of other users (e.g., commercial, and municipal users), restrictions to withdrawals due to regulations, and constraints on the entity’s ability to obtain and retain water rights or permits |
| Risks associated with the discharge of water and/or wastewater include but are not limited to, the ability to obtain rights or permits related to discharges, compliance with regulations related to discharges, restrictions to discharges, the ability to maintain control over the temperature of water discharges, liabilities, and/or reputational risks, and increased operating costs due to regulation, stakeholder perceptions and concerns related to water discharges (e.g., those from local communities, non-governmental organizations, and regulatory agencies). |
| The total number of instances of non-compliance, including violations of technology-based  standards and exceedances of quantity and/or quality-based standards. |
| **Food Safety** |
| Agricultural products are sold directly to consumers in raw form or are further processed before reaching consumers. Maintaining product quality and safety is critical, as contamination by pathogens, chemicals, or spoilage presents severe human and animal health risks. Poor farming, transport, storage, or handling practices may contaminate contaminants. Food quality and safety issues can lead to consumer-driven demand changes and regulatory action.  Product recalls can harm brand reputation, reduce revenues, and lead to costly fines. Obtaining food safety certifications or ensuring suppliers meet food safety guidelines may help companies safeguard against product safety risks and communicate the quality of their products to buyers. |
| **Reporting Sustainability Indicators** |
| Non-conformance rates with Global and National Food Safety Initiative (GFSI) recognized  food safety certification programs for (a) significant non-conformances and, separately, (b) minor non-conformances. |
| **Workforce Health & Safety** |
| Industrial processes used in the agricultural industry present significant occupational hazards. Employees are engaged in many labor-intensive activities. Common hazards include falls, transportation accidents, equipment-related accidents, and heat-related illness or injury, among others. Health and safety standards violations could result in monetary penalties and costs for corrective actions. High injury rates, particularly fatalities, may indicate a weak governance structure and workplace safety culture, leading to significant reputational harm. Strong performance in managing workforce health and safety can help build brand image while promoting worker morale, which may lead to increased productivity, reduced worker turnover, and enhanced community relations. |
| **Reporting Sustainability Indicators** |
| Total recordable incident rate (TRIR) for work-related injuries and illnesses. |
| **Environmental & Social Impacts of Ingredient Supply Chain** |
| Agricultural businesses source agricultural inputs from a large number of suppliers. How companies in the industry screen, monitor, and engage with suppliers on environmental and social topics may impact consumer demand, reputational risks, and the ability of companies to manage their crop supply and respond to price fluctuations effectively. Supply chain management issues related to labor, environmental practices, ethics, or corruption may result in regulatory fines and/or increased long-term operational costs for companies. Similarly, agricultural products companies may face reputational damage if their suppliers perform poorly on environmental or social issues. Companies can mitigate these risks and potentially increase consumer demand or capture new market opportunities by engaging with key suppliers to implement sustainable agricultural practices or sourcing from certified suppliers. |
| **Reporting Sustainability Indicators** |
| Strategy to manage environmental and social risks that arise from its contract growing and  commodity sourcing practices. Environmental and social risks include but are not limited to extreme weather events, water stress, degradation of the environment, labor rights, and community rights. |
| The percentage of agricultural products it sourced that are certified to a third-party  environmental and/or social standards. Environmental standards are defined as standards that address environmental impacts related to the production of agricultural products, such as the protection of primary forests, maintenance of surface water and groundwater quality, and implementation of integrated pest management (IPM) solutions or an Organic System Plan. Social standards are defined as standards that address social impacts related to the production of agricultural products, such as workforce compensation, training, and continual monitoring of health and safety risks associated with applications of agrochemicals. |
| **GMO Management** |
| Agricultural products developed using genetically modified organism (GMO) technology have gained increasing consumer interest. While GMO technology has, in many cases, enabled improvements in crop yield through the development of disease or drought-resistant traits in plants, there is increasing consumer concern about the perceived health, environmental, and/or social impacts related to the cultivation and consumption of GMOs.  Note: China has studied GMO food crops for decades but has never permitted them to be planted because of technological opposition. However, it allows imported GMO soybeans and corn for use in animal feed and the planting of GMO cotton. |
| **Reporting Sustainability Indicators** |
| Not Applicable |

#### Sustainability Reporting-Eco Tourism

The following Table 06 presents the Sustainability Reporting indicators for Eco-Tourism.

Table 06 Sustainability Reporting- Eco-Tourism

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| **Sustainability Reporting Indicators** |
| **Eco-Tourism** |
| **Ecological Impacts** |
| Healthy ecosystems are linked with local communities and businesses' economic and financial performance. The influx of tourists and lodging waste can risk sensitive ecosystems such as coral reefs and nature preserves. In the long term, they could diminish natural tourist attractions that help generate revenue for communities. In contrast, the protection of the environment may make travel destinations more attractive and increase demand for lodging and tourist bookings. |
| **Reporting Sustainability Indicators** |
| The number of lodging facilities operated, owned, leased, or franchised in sites with  protected conservation status or areas of endangered species habitat. |
| Description of environmental management policies and practices relating to preserving the ecosystem services. Ecosystem service is defined as a service people obtain from the environment based on transforming natural assets (soil, plants, animals, air, and water) into directly valued things. Ecosystem services can be viewed as (a) provisioning, which refers to use for resources such as food and water; (b) regulating, which refers to uses such as flood and disease control; (c) cultural, which refers to uses that are spiritual, recreational, or provide cultural benefits; or (d) supporting, which refers to those systems that maintain the conditions for life on Earth. This definition is derived from the International Union for Conservation of Nature's Commission on Ecosystem Management. |
| **Climate Change Adaptation** |
| Physical climate risks, including inclement weather and flooding, may impact tourist activities in climate change-exposed areas. Inclement weather may damage property and disrupt operations, reducing asset values and revenues. In addition, lodges may face higher insurance premiums for buildings located in coastal regions or may be unable to insure their properties. Hotel operators must likely adapt to shifting climate trends such as rising sea levels, hurricanes, and flooding to maintain their climate-exposed revenue-generating properties. |
| **Reporting Sustainability Indicators** |
| The number of lodging facilities in flood zones. |
| **Customer Safety** |
| Eco-tourism exposes guests to potentially unsafe conditions that may result in injury and even death. Safety management, therefore, includes managing the safety of lodges, boats, restaurants, and transportation. The industry is mainly subject to low-probability but high-magnitude safety concerns. Ensuring the highest safety standards can help businesses minimize reputational damage and liabilities from costly lawsuits. |
| **Reporting Sustainability Indicators** |
| Rates of (1) Fatality rate and (2) Injury rate for customers |
| The percentage of facilities that were inspected for facility safety by a relevant regulatory  oversight authority during the reporting period. |
| **Workforce Safety** |
| The tourist industry can expose employees to injuries if facilities and equipment are not maintained or precautions and training procedures are not in place. Boats, swimming, or diving may expose employees to potentially unsafe conditions resulting in injury or death. Potential financial impacts associated with employee safety violations include regulatory fines, abatement costs, and negative impacts on brand reputation. These impacts may stem from accidents as well as from chronic safety issues. |
| **Reporting Sustainability Indicators** |
| Total recordable incident rate (TRIR) and near miss frequency rate (NMFR) for (a) permanent employees and (b) seasonal employees |

#### Introduction of E-businesses for women groups

The following Table 07 presents the Sustainability Reporting indicators for E-Businesses.

Table 07 Sustainability Reporting- E-Businesses

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| **Sustainability Reporting Indicators** |
| **E-Businesses for Women Groups** |
| **Hardware Infrastructure** |
| E-Businesses require access to reliable energy supply and communication infrastructures, both physical and wireless. |
| **Reporting Sustainability Indicators** |
| Integration of environmental considerations into the planning of data centers. Environmental factors may include energy-efficiency standards; and location-based elements, such as accounting for regional humidity, average temperature, water availability and groundwater stress, water permits, provincial- or state-level carbon legislation or pricing, and the carbon intensity of electricity from the local grid. |
| **Data Privacy & Advertising Standards** |
| E-Businesses can access consumer information, including financial information, purchase history, and primary demographic data. Companies in this industry must carefully manage two separate and often conflicting priorities. On the one hand, businesses compete on their ability to leverage data to provide users with relevant services and target advertising or product recommendations based on consumers' preferences and behavior patterns. On the other hand, the fact that businesses have access to a wide range of user data, such as personal, demographic, and behavioral data, raises  privacy concerns among users and the public. Failure to manage the issue can result in costs associated with regulatory oversight and reputational risks. Furthermore, effective management in this area can have financial implications through increased user confidence and loyalty, which are particularly important to maintain market share. |
| **Reporting Sustainability Indicators** |
| The number of unique users whose information is used for secondary purposes.  User information includes information that pertains to a user's attributes or actions, including but not limited to account statements, transaction records, records of communications, the content of communications, demographic data, behavioral data, location data, and/or personally identifiable information (PII). |
| Description of the nature, scope, and implementation of policies and practices related to user privacy,  with a specific focus on how it addresses user information collection, usage, and retention. |
| Description of the information "lifecycle" (i.e., collection, usage, retention, processing, disclosure, and  destruction of information) and how information-handling practices at each stage may affect individuals' privacy. |
| **Data Security** |
| E-Business depends on the ability to process electronic payments securely. As consumers become more educated about cybercrime threats, particularly in the wake of continued high-profile attacks, having a reputation as a secure company will become increasingly essential to maintain or gain market share. There is an opportunity for the most trusted brands to position themselves favorably in the eyes of consumers and gain a significant competitive advantage. This makes user loyalty, which is highly influenced by the perception of the safety of the user's valuable financial and personal information, essential in maintaining market share. |
| **Reporting Sustainability Indicators** |
| Description of the approach to identifying vulnerabilities in its information systems that pose a data security risk.  Vulnerability is a weakness in an information system, system security procedures, internal controls, and/or implementation that could be exploited.  Data security risk is defined as any circumstance or event with the potential to adversely impact organizational operations (including mission, functions, image, or reputation), corporate assets, individuals, other organizations, or nations through an information system via unauthorized access, destruction, disclosure, modification of information, and/or denial of service. |
| **Inclusion & Performance** |
| Comprehensive and equal inclusion of all beneficiaries in the management and operation of E-Business is critical. |
| **Reporting Sustainability Indicators** |
| Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other operators and owners |
| Presence of measures that include training on diversity, mentorship, and sponsorship programs. |
| **Product Packaging & Distribution** |
| E-Business has an incentive to minimize the use of packaging. Where efficient packaging can lead to cost savings by reducing the amount of material that needs to be purchased, as well as  saving on logistics costs, as more products can fit into a single shipping load. |
| **Reporting Sustainability Indicators** |
| Strategies to reduce the environmental impact of fulfillment and delivery of its products,  including impacts associated with packaging materials and those associated with product transportation. |