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GREEN RECONSTRUCTION GUIDELINES FOR ASSISTANCE TO FISHING COMMUNITIES, AND REBUILDING FISHERIES AND AQUACULTURE SECTORS IN TSUNAMI IMPACTED COUNTRIES

WWF recognizes that Post tsunami reconstruction efforts face the challenge of meeting immediate humanitarian needs whilst balancing longer term natural disaster mitigation and ensuring sustainable development. In the coastal zone of the tsunami affected region, many communities and individuals depend on a healthy marine environment as a source of food and livelihood and maintaining the health of these ecosystems should be seen as a key component of rebuilding healthy and safe local communities and economies.

WWF believes that it is possible to fully integrate sustainable fisheries management and sustainable environmental concerns in rehabilitation and reconstruction efforts and that such "Green Reconstruction" should become an explicit goal of the overall assistance efforts. To achieve 'Green Reconstruction', WWF is developing a set of Green Reconstruction Goals, Principles and Guidelines to provide practical tools on Best Practices and clear policy guidance that will ensure reconstruction efforts are carried out in a sustainable manner. WWF encourages all relevant donors, agencies and partner organizations to incorporate these guidelines in their reconstruction efforts.

WWF's Goal is to provide guidance that i) ensures reconstruction efforts have minimum negative environmental impact and ii) promotes positive choices during the reconstruction and rehabilitation process that optimize environmental goods and services as well as development and livelihood opportunities.

Green Reconstruction aims to provide long term mainstreaming of environment in development, and ensure effective participation of local communities in resource governance. The weakness of local institutions is a critical point, as is the need for effective participation of people in decision making processes.

WWF's Green Reconstruction Guidelines build on the Reconstruction advice and framework provided by the donor community and Government of Indonesia in the form of the "Reconstruction Note" of Jan 19-20th published on the World Bank Indonesia website (www.worldbank.id)

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Green Reconstruction Goals

- To restore people's lives and fulfill their needs
- To restore the economy and provide work opportunities, markets and incentives
- To rebuild communities and give them social stability
- To restore the system of local governance, that represents people's aspirations
- To re-establish the coastal regions as politically stable and economically vibrant, and resilient and protected against new disasters.
- To minimize negative externalities of reconstruction on livelihoods and the natural environment.
- To ensure rehabilitation, reconstruction and future development follows a sustainable path.
- To ensure long term of improved quality of life.

Green Reconstruction Principles:

- I) A people-centered and participative process, where the administration listens and understands the feelings and aspirations of the people;
- II) A holistic approach – rebuilding based on a comprehensive strategy
- III) Effective coordination for consistency and effectiveness among sectors and regional programs at national and local levels;
- IV) Incorporating fiscal transparency and effective monitoring into the rehabilitation and reconstruction programs.
- V) Apply Principles of Sustainable Development
- VI) Focus on those most in need:
- VIII) Activities framed in a Spatial Plan
- IX) Ensure Good Governance
- VII) Build and Empower Strong Local Institutions

The following issues are seen as being key components of successful engagement with coastal communities in tsunami affected areas:

General:

Do no further harm - Evaluate all proposed actions for potential short and long-term social and environmental consequences, considering both direct and indirect impacts, and aim to find solutions that minimise costs and maximise benefits.

Social and Local Values:

Act locally - Prioritise rehabilitation activities that allow individuals to rebuild their homes, livelihoods and communities, paying particular attention to those who are vulnerable, such as women and children and those engaged in subsistence activities.

Natural Resources and Environment:

Respect Local culture and values – The coastal area impacted by the tsunami is rich in culture and heritage, including the offshore islands. Care must be taken to respect and preserve these values.

Carrying Capacity is not exceeded – Understand and respect the carrying capacity of natural ecosystems and apply a precautionary approach to ensure that limits are not exceeded.

Restore Natural Defence System – Rehabilitation of protective natural coastal ecosystems is incorporated in spatial planning framework.

Use Sustainably sourced materials where possible – Reconstruction should focus on rebuilding local industries and where possible, use sustainably sourced or recycled materials.

Implementation:

Follow Sustainable Development Principles – Fully integrated environmental and social issues in all aspects of the reconstruction process, and work within a sustainable development framework that includes maximising environmental goods and service.

Frame activities in a clear Spatial Plan – Reconstruction efforts should be framed by a clearly defined regional spatial plan, produced

with effective participation of all relevant stakeholders.

Process for Resolving Tenure Issues – Spatial planning efforts will not be effective unless an effective process is in place for resolving tenure issues.

Framework for Disaster Management – Appropriate mechanism such as early warning, disaster training and local, provincial, national and regional disaster response action plans in place.

Build Strong Local Institutions – An urgent need is to build effective local institutions in both the formal and informal sectors. Steps to ensure this include secondment of staff and expertise and technical support

Empower Local Government – Re-empower the Aceh people and local Government in regulation, funding and management of the reconstruction process.

Build Human Capacity of local Institutions – A key component is to long-term capacity building in both formal and informal sectors through training, cross-visits and targeted capacity building programs.

Effective participation – The framework and mechanisms need to be in place to ensure effective participation by all relevant groups in the governance and decision making process.

Effective Communication and Coordination - During the reconstruction there need to be effective mechanisms for coordination of all public, private and donor efforts.

Transparency – Government agencies and the informal sector needs to ensure that mechanisms for transparency are in place.

Accounting Mechanism – Clear mechanism must be in place to ensure full accountability of funds used in the reconstruction process.

Conflict Avoidance and Mitigation – Care should be taken to minimise likelihood of conflict among natural resource users.

GUIDELINES FOR GREEN RECONSTRUCTION:

1. Rebuilding well managed small-scale coastal fisheries

1.1 Goal:

A small scale fisheries sector is re-established that is sustainably managed, equipped with appropriate gears, does not exceed carrying capacity, and which promotes best practices.

1.2 Best Practice Strategy:

.1.2.1 Assessment:

- Review impact and loss and infrastructure needs (boats, gears, ice plants, landing docks, institutions, management frameworks etc), including areas of weakness in fisheries management before tsunami (illegal fishing, incursion by foreign fleets, lack of sustainable fisheries management frameworks).
- Identify those among impacted small scale fishing communities that are most vulnerable (eg subsistence fishers, widows).
- Identify remaining human resources and capacity (boatbuilders, boats needing repair), local fisheries management networks, in both formal and informal sectors,
- Identify and assess state of fisheries resources, including examining historical catch data and surveys to create a picture of an optimal resource base.
- Collect data on traditional and cultural uses, hopes and aspiration of local communities.
- Identify and provide information on relevant informal and formal management mechanisms, including legislation such as the new
- Provide and adapt guidelines and lessons learned on best practices in small scale fisheries management, and rebuilding impacted fisheries

sectors eg Ecosystem based management principles.

1.2.2 Reconstruction:

- Develop a sustainable fisheries reconstruction plan, focusing on creating an over-arching sustainable fisheries management framework, sustaining target fish populations, conserving sites critical for replenishment, rebuilding boats, and gears, and developing supporting infrastructure and markets.
- Where possible, promote community led reconstruction efforts invest in local industries and local capacity for rebuilding boats and infrastructure, under the guidance of capacity limits.
- Where possible promote the use of recycled or sustainable sourced materials, and re-equip with appropriate gears.
- Take care not to allow the introduction of inappropriate technologies and critically evaluate donor or national government driven initiatives to provide substantially different boats or gears.
- Take care with rebuilding landing sites and harbours to minimise impact on coastal ecosystems.
- Invest in reconstruction of strong local formal and informal institutions and human capacity for management including monitoring and enforcement. This should be coupled with efforts to rebuild infrastructure.
- Provide education materials to relevant stakeholders including fishers, managers and donors of the need to rebuild sustainable fisheries management frameworks, including, codes of conduct and best practices, including protecting spawning sites and other important features for replenishment.
- Provide incentives and access to markets for product of a certification standard to encourage best practice, and if appropriate, develop

infrastructure and trade networks to support such ventures.

- Aim to address tenure issues through opportunities such as providing equity in a larger enterprise.
- Provide access to training, grant, credit or enterprise opportunities particularly in the area of best practice sustainable fisheries.
- Provide access to training, grant, credit or enterprise opportunities or alternative livelihood opportunities for those fishers unwilling to return to the sea or those wishing to pursue different livelihoods, recognising the trauma associated with the sea for many.
- Focus on removing illegal activities and unsustainable practices present before the tsunami.

1.3 Measures of Success of Best Practice:

1.3.1 Natural Resources and Environment

- Reduced use of unsustainable and destructive fishing gears
- Catch data indicates healthy and sustainably managed source populations: eg Size frequency data, catch per unit effort,
- Fish population surveys and ecosystem surveys reveal improvements or maintenance of healthy ecosystem structure
- Effective protection of vulnerable and important areas for fish population replenishment.
- Carry capacity clearly identified and limits respected.

1.3.2 Governance and Institutions Indicators

- Fisheries management plan supported by local stakeholders
- Effective fish catch reporting and dissemination of data both to provincial and national data centers, and back to fishing communities
- Effective monitoring and enforcement

- Reduced incidence of illegal fishing activities
- Integration of traditional fisheries knowledge and management into management frameworks
- Effective participation of local institutions representing fisher communities in Governance process.
- Effective mechanism available and being used to transmit community aspirations to local institutions representing their interests
- Fisheries management authorities staffed with skilled and trained personnel.
- Local institutions representing fisheries and coastal resource management empowered and staffed with skilled and aware personnel
- Raised awareness of need for sustainable fisheries management within local institutions, fishers and government

1.3.3 Development Indicators

- Percentage of community engaged in subsistence fishing
- Average income of fishing households
- Access to markets, including markets for best practice fisheries products for a community
- Availability of technologies for post-harvesting processing, wastage and spoilage prevention.
- Numbers of fishing households engaged in grant, micro-credit or micro-enterprise schemes to
- Numbers of impacted fishers wishing to return to the sea, able to do so

2 Rebuilding a sustainably managed commercial fisheries sector

2.1 Goal:

The commercial fisheries sector is sustainably managed, operates according to best practices within a precautionary framework, uses appropriate gears and capacity, is supported by efficient post-

harvesting technology and infrastructure, and does not compromise subsistence fisheries.

2.2 Best Practice Strategy:

2.2.1 Assessment:

- Review equipment and infrastructure impact, loss and needs (eg boats damaged, boats lost, gears lost, ice plants, landing docks).
- Review capacity to manage effectively, including weaknesses in management, institutions, reporting, enforcement capacity, stock assessments, including issues that existed prior to the tsunami.
- Identify those among impacted commercial fishing sector that are most vulnerable (eg crew, widows, dockyard workers).
- Identify remaining resources human resources and capacity (boatbuilders), and resources eg recyclable wood
- Identify and assess state of fisheries resources, including examining historical catch data and surveys to create a picture of an optimal resource base.
- For each proposed commercial fishery, identify relevant management units for fish populations and ecosystem based management units, and identify indicators and thresholds for sustainable management of target populations.
- Collect data on potential ecosystem carrying capacity, proposed fishing grounds, traditional and cultural uses, hopes and aspiration of local communities.
- Identify and provide information on relevant informal and formal management frameworks, such as provincial fisheries plan projections, and relevant legislation.
- Review existing fisheries for potential for certification or best practice markets.

- Provide and adapt guidelines and lessons learned on best practices in commercial fisheries management, and rebuilding impacted fisheries sectors eg Ecosystem based management principles.

2.2.2 Reconstruction:

- Develop a sustainable fisheries reconstruction plan, focusing on creating an over-arching sustainable fisheries management framework, sustaining target fish populations, and conserving sites critical for replenishment,
- Develop a sustainable fisheries infrastructure reconstruction plan, involving rebuilding boats, gears, supporting infrastructure, markets, strengthening local institutions involved in small scale fisheries, and strengthening fisheries governance.
- Where possible, promote community led reconstruction efforts invest in local industries and local capacity for rebuilding boats and infrastructure, under the guidance of capacity limits.
- Where possible promote the use of recycled or sustainable sourced materials, and re-equip with appropriate gears according to a sustainable fisheries management plan.
- Take care not to allow the introduction of inappropriate or unfamiliar technologies, and critically evaluate donor or national government driven initiatives to provide substantially different boats or gears.
- Take care with rebuilding landing sites and harbours to minimise impact on coastal ecosystems.
- Invest in reconstruction of strong local formal and informal institutions and human capacity for management including monitoring and enforcement. This should be coupled with efforts to rebuild infrastructure.

- Ensure effective surveillance, enforcement and compliance mechanisms for are in place to prevent over-exploitation of fish populations and other targeted components of the ecosystems, and to prevent other activities from having a significantly damaging impact on the health of the ecosystems.
- Provide education materials to relevant stakeholders including fishers, managers and donors of the need to rebuild sustainable fisheries management frameworks, including, codes of conduct and best practices, including protecting spawning sites and other important features for replenishment.
- Provide incentives and access to markets for product of a certification standard to encourage best practice, and if appropriate, develop infrastructure and trade networks and seek markets to support such ventures.
- Aim to address tenure issues through opportunities such as providing equity in a larger enterprise.
- Provide access to training, grant, credit or enterprise opportunities particularly in the area of best practice sustainable fisheries.
- Provide access to training, grant, credit or enterprise opportunities or alternative livelihood opportunities for those fishers unwilling to return to the sea or those wishing to pursue different livelihoods, recognising the trauma associated with the sea for many.
- Provide alternative livelihoods, compensation or provide for gear modification for those subjected to restriction based on an effective management regime.
- Focus on removing illegal activities and unsustainable practices present before the tsunami.

2.3 Measures of Success of Best Practice:

2.3.1 Natural Resources and Environment

- **Reduced use of unsustainable and destructive fishing gears**
- **Catch data indicates healthy and sustainably managed source populations: eg Size frequency data, catch per unit effort,**
- **Fish population surveys and ecosystem surveys reveal improvements or maintenance of healthy ecosystem structure**
- **Effective protection of critical, vulnerable and important areas for fish population replenishment, within the context of Fisheries Management plans.**
- **Carry capacity clearly identified and limits respected.**

2.3.2 Governance and Institutions Indicators

- **Fisheries management plan supported by local stakeholders**
- **Effective fish catch reporting and dissemination of data both to provincial and national data centers, and back to fishing communities**
- **Effective monitoring and enforcement, and capacity control frameworks to provide adaptive feedback.**
- **Reduced incidence of illegal fishing activities**
- **Integration of traditional fisheries knowledge and management into management frameworks**
- **Effective participation of local institutions representing fisher communities in Governance process.**
- **Fisheries management authorities staffed with skilled and trained personnel.**
- **Local institutions representing fisheries and coastal resource management empowered and staffed with skilled and aware personnel**
- **Indonesia Fisheries Law and create a sustainable fisheries management plan for commercial fishers.**

2.3.3 Development Indicators

- **Percentage of community engaged in fishing activities on boats where catch is sold commercially.**
- **Average income of fishing households**
- **Access to markets, including markets for best practice fisheries products for a community**
- **Availability of technologies for post-harvesting processing, wastage and spoilage prevention.**
- **Numbers of fishing households engaged in grant, micro-credit or micro-enterprise schemes to**
- **All fisheries sector in-kind aid assessed in terms of viable and appropriate gear, resulting capacity and interaction with subsistence fishers.**

3 Rebuilding a sustainably managed aquaculture sector

3.1 Goal:

The aquaculture sector is sustainably managed, operates according to best practices within a coastal zone management framework, and minimises negative impacts on marine and coastal ecosystems.

3.2 Best Practice Strategy:

3.2.1 Assessment:

- **Review loss and damage of production area, including physical changes in coastline, inundation, erosion and sedimentation.**
- **Review equipment and infrastructure impact, loss and needs.**

3.2.2 Reconstruction:

- **As far as possible provide alternative livelihoods and compensation whilst the aquaculture sector is reviewed, infrastructure needs assessed and a sector specific reconstruction plan developed.**
- **Support and reconstruction should be framed within a larger coastal zone management and spatial planning**

- framework, that may recognise the need for reclamation of lands previously under aquaculture.
- Promote incentives for reclamation and reducing area under aquaculture to allow for coastal mangrove green belt and other forms of coastal set back and protection.
 - Support and reconstruction should be in line with best practice guidelines for aquaculture, including minimising impact on other ecosystems.
 - Provide incentives and access to markets for product of a certification standard to encourage best practice.
 - Address tenure issues through opportunities such as providing equity in a larger enterprise.

3.3 Measures of Success of Best Practice:

3.3.1 Natural Resources and Environment

- Aquaculture operations meet best practice standards in terms of reduced impact of effluent on coastal and downstream environments.
- Aquaculture operations located within appropriate zone as part of an Integrated coastal zone management plan.
- Sourcing of broodstock has no negative impact on the environment.

3.3.2 Governance and Institutions Indicators

- Aquaculture recovery plan supported by local stakeholders
- Effective aquaculture yield reporting and dissemination of data both to provincial and national data centers, and back to participating communities
- Effective monitoring and enforcement, and capacity control frameworks to provide adaptive feedback.
- Effective participation of local institutions representing local communities in Governance process.

- Aquaculture management authorities staffed with skilled and trained personnel.
- Raised awareness of need for sustainable aquaculture management within local institutions, local communities and government

3.3.3 Development Indicators

- Average income of household engaged in aquaculture sector
- Percentage of aquaculture production that meets best practice criteria.
- Percentage of aquaculture production that has access to markets for best practice products.
- Numbers of aquaculture households engaged in grant, micro-credit or micro-enterprise schemes to improve
- All aquaculture sector in-kind aid assessed in terms of viable and appropriate technology, and impact on environment.



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WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.