Biodiversity Strategy and Action Plan
Terrestrial Biodiversity Working Group

Impact Assessment Focus Group

Report on Recommendations (Final)

September 2014

Contents

1. BACKGROUND

1.1 Title (priority in question)

Assessment of Impacts

1.2 Relevant Aichi Biodiversity Targets

- ***ABT5*** – By 2020, the rate of loss of all, natural habitats including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation are significantly reduced.

- ***ABT10*** – By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate or ocean acidification, are minimized, so as to maintain their integrity and functionality

- ***ABT12*** – By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

- ***ABT14*** – By 2020, ecosystems that provide essential services, including services related to water and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

1.3 Leaders

Mr Henry Leung and Dr Ng Cho Nam, B.B.S., J.P

1.4 Members

Association	Name
Agriculture, Fishers and Conservation Department (AFCD)	Dr Jackie Yip
Australian Chamber of Commence	Simeon Cheng
Designing Hong Kong	Mr Paul Zimmerman*^
Hong Kong Bird Watching Society (HKBWS)	Jocelyn Ho
Hong Kong Institute of Environmental Impact Assessment (HKIEIA)	Andy Chung

Association	Name
HKIEIA	David Gallacher
HKIEIA	Dr Jasmine Ng
HKIEIA	David Stanton
HKIEIA	Henry Leung (Co-leader)*
HKIEIA	Karen Lui
HKIEIA	Rebecca Ieong
HKIEIA	Terence Fong
Kadoorie Farm & Botanic Garden (KFBG)	Dr Gary Ades*
KFBG	Dr Gunter Fischer
KFBG	Dr John Fellowes
KFBG	Philip Lo
KFBG	Tony Nip
The University of Hong Kong	Dr Ng Cho Nam, B.B.S., J.P (Co-leader)*^
WWF Hong Kong	Andrew Chan

**Working Group members*
^Steering Committee members

1.5 Summary of Meetings Organized

Meeting No.	Date of Meeting
First Meeting	18 November 2013
Second Meeting	7 March 2014
Third Meeting	11 June 2014

2. OBJECTIVE

The Convention on Biological Diversity (the Convention) identifies impact assessment as a key instrument for achieving the objectives of the Convention. This focus group is to examine the existing and potential threats to the terrestrial[1] biodiversity of Hong Kong. During this threat identification process, reference was draw to Article 7(c) of the Convention, which stipulated that signatories "identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques".

2.1 Scope

- To take stock of existing threats and drivers of local biodiversity loss
- To evaluate the most significant impacts to the terrestrial biodiversity
- To develop recommendation/action plan to help address the identified impacts
- To report to the Working Group the findings and recommendations of the IAFG

2.2 Methodology

As agreed in the focus group meeting, an online questionnaire[2] was developed to compile an evaluation of impacts by different stakeholders and their opinions on important measures for addressing the most significant impacts. The questionnaire made reference to the IUCN Threats Classification System[3] and was customized to suit the local context. Please refer to **Annex I** for the list of impacts and recommendations in the questionnaire.

The questionnaire survey was officially launched on 14 March and run until 31 May 2014, to enable all members and relevant stakeholders, especially those with knowledge of conservation and impact assessment, to participate in the questionnaire. These included but were not limited to the following:

- Members of BSAP Steering Committee, all Working Groups and Focus Groups
- Members of the Chartered Institution of Water and Environmental Management Hong Kong
- Members of the Hong Kong Institution of Engineers (Environmental Division)
- Members of the Hong Kong Institute of Environmental Impact Assessment

[1] For the purpose of the BSAP exercise, the terrestrial habitats covered under this focus group included all terrestrial and freshwater habitats, as well as other intertidal habitats such as intertidal mudflats/streams and mangroves.
[2] IAFG Online Questionnaire. Available at *https://www.surveymonkey.com/s/bsap*
[3] IUCN Threats Classification Scheme (Version 3.2). Available at *http://www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme*

- The Hong Kong Bird Watching Society (Conservation committee, staff and members of the research groups)

Through this questionnaire exercise, the five most significant impacts and the corresponding recommendations were identified and prioritized.

3. RESULTS OF THE IMPACTS SURVEY

3.1 Background of Respondents

During the survey period, a total of 98 responses were received and the majority (91%) of the respondents was from an environmental background in which 45% with over 15 years of relevant experience. About 29% of the respondents were from the NGOs while 25% and 17% of the respondents were from environmental consultancy firms and government departments respectively. The remaining respondents were across different sectors such as project proponents, construction industries and educational institutes. Their field of expertise (from 43 respondents) also varied such as EIA, conservation, ecology and air quality. The background of the respondents is presented in **Annex IIA**.

3.2 Evaluation of Impacts

In the questionnaire, participants were asked to select the five most significant impacts to terrestrial biodiversity within a timeframe of 10 years. Based on the responses, there were three impacts that had apparently higher weighted scores than those of other impacts as follows (see **Annex IIB** for details):

- ***No.1 Most Significant Impact*** – Habitat Loss Due to Human Development - Residential Uses (e.g. housing development) (score 312, ~88% of the respondents)
- ***No.2 Most Significant Impact*** – Habitat Loss Due to Human Development - Infrastructure (e.g. railway, airport, roadworks) (score 246, ~80% of the respondents)
- ***No.3 Most Significant Impact*** – Habitat / Ecosystem Modification / Fragmentation and other Associated Disturbance Through Direct Human Activities (including changes in water abstraction and fire regime) (score 143, ~56% of the respondents)

Their associated recommendations were then further discussed during the 3rd focus group meeting (see **Section 4**).

3.3 Discussion

As discussed in the focus group meeting, it is important to present the results of all impacts in the report so as to give an overview of the impact evaluation across different issues (see **Annex II**). For example, it is surprising to note that Climate Change & Severe Weather and Air Pollution ranked the 4th and 5th significant

impact (although both had <6% of the total weighted scores) given these were usually considered as long-term impacts instead of this 10-years timeframe. It is also worth noting other selected impacts such as Habitat Loss Due to Natural Process – Succession and Problematic Species whose issues would be elaborated by other focus groups.

It is also suggested to conduct literature review on the most important impacts in the region e.g. the CEPF Indo-Burma Ecosystem Profile.

4 RESULTS OF THE RECOMMENDATIONS SURVEY

4.1 Respondents' General Recommendations

Based on the three most significant impacts as identified during the survey, their associated five most important recommendations were summarized as follows (see **Annex II** for details):

Recommendations	% (Rank)		
	No. 1 Impact	**No. 2 Impact**	**No. 3 Impact**
Improved policy implementation: Planning and Strategic Environmental Assessment	20.4% (1)	22.7% (1)	12.2% (1)
Review: Existing laws, regulations and guidelines on nature conservation and environmental protection	14.3% (2)	8.9% (4)	9.4% (3)
Improved policy implementation: Governance	12.7% (3)	10.5% (3)	8.3% (5)
Improved policy implementation: Proactive enforcement of existing laws, regulations and guidelines on nature conservation and environmental protection	12.1% (4)	7.4% (5)	12.1% (2)
Improved policy implementation: Environmental Impact Assessment	7.6% (5)	13.7% (2)	-
Improved policy implementation: Education and public engagement	-	-	8.5% (4)

Given that there were overlapping recommendations across the three most significant impacts identified, it was agreed to elaborate these recommendations collectively during the meeting. The following was discussed:

1) **Improved policy implementation: Planning and Strategic Environmental Assessment (SEA) / Environmental Impact Assessment (EIA)** – Improving SEA implementation was the most selected recommendation for all the three most significant impacts identified from the survey results.

- Members acknowledged that under the designated projects listed in Schedule 3 to the Environmental Impact Assessment Ordinance (EIAO) are major urban development projects and redevelopment projects (e.g. North East New Territories New Development Areas Project by CEDD) which shall follow the statutory EIA process and require approval of EIA reports.

- However, some members considered that there was a lack of statutory regulations / mechanism / technical memorandum for the SEA process in Hong Kong to meet the uplifted expectation from the public. Under the existing application system, for example in the NENT project, SEA was undertaken at

the same time as EIA and formulated in a single report, where they could have done it by 2 stages process to address the issue at a strategic level at the SEA stage, then review them in a more localized content during the EIA stage.

Recommendations

1.1 Initiate a new planning study or to carry out a comprehensive review on the HK2030 that was completed in 2007, which a SEA would be conducted to provide an environmental baseline and assess its development options.

1.2 Review the current sustainability assessment (SusDev) practice to further strike the balance among the social and economic issues to address the recent demands from various projects.

1.3 Consider strategic environmental issues as part of any major planning study when plans or programmes are formulated at an early stage of the study process.

1.4 Members recognized that in some planning studies, SEA was conducted focusing on its own development and it was suggested that more regional review to assess the cumulative environmental impacts should be incorporated.

1.5 Conduct ecological surveys prior to the EIA Study so to collect more ecological data in early stage. The effectiveness of the ecological mitigation measures was also discussed including species translocation, off-site/on-site and wetland compensation and relevant guidelines and/or best practices should be developed to establish a common practice and to align them with the international practices.

2) Review of existing laws, regulations and guidelines on nature conservation and environmental protection –

- As required under Article 14 of the Convention, it was also acknowledged that the impact assessment to projects, programmes, plans and policies with a potential negative impact on biodiversity are being covered by the following current legislation and guidelines.

- Environmental Impact Assessment Ordinance (Cap. 499)
- Technical Memorandum on Environmental Impact Assessment Process
- EIAO Guidance Notes related to ecological assessments (GN 6/2010, GN 7/2010, GN 10/2010, GN 11/2010)
- Guidelines and Procedures for Environmental Impact Assessment of Government Projects and Proposals (ETWB TCW No.13/2003)
- Hong Kong Strategic Environmental Assessment Manual
- Examples of Strategic Environmental Assessment (SEA) in Hong Kong
- Town Planning Ordinance (Cap. 131)
- Hong Kong Planning Standards & Guidelines Chapter 10 Conservation
- Town Planning Board Guidelines TPB PG-No. 12C Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance
- Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works (ETWB TCW No.5/2005)
- Examples of Environmentally Friendly Drainage Channel Designs Arising from Environmental Impact Assessments

- It was acknowledged that under the Town Planning Ordinance (TPO), it allows provision for conservation area, coastal protection areas, sites of special scientific interest, green belts or other specified uses in town plans, and designation of such land use zoning to offer various degree of protection according to the ecological value of the areas concerned. There are also planning guidelines for conservation purpose, e.g. the TPB Guidelines No.12C on developments within Deep Bay Area for protecting the habitats there which form part of the wider wetland ecosystem.

Recommendations

2.1 Review the rural and new town development to minimize the associated impacts on biodiversity and how the post construction control shall be established to formulate an effective monitoring mechanism.

2.2 Member also commented that the guidelines for development application for Green Belt Zone should be further reviewed to minimize impacts on those GB sites with high ecological values. It is noted that the issues associated

with GB rezoning would be further discussed by the Terrestrial Habitat Focus Group.

2.3 It was also considered that there is a lack of a common database or GIS system for accurately quantifying the overall habitat loss due to development projects. Such database or GIS system should be set up and/or referenced during the course of EIA study to facilitate impact assessment in terms of the preparation of habitat map and habitat loss calculation, and the database should be in compatible with the AFCD's existing GIS system.

2.4 Allocate more resources for EPD/AFCD to make reference to the previously approved EIA data in terms of habitat maps and loss and integrated them into the AFCD's existing GIS system.

2.5 The focus group acknowledged that this was evaluated as one of the five important recommendations, but the elaboration of this recommendation is a colossal task beyond the scope of this focus group. The result would be brought forward to the Working Group for deliberation.

3) **Improved policy implementation: Governance –** the focus group considered that this recommendation was a very broad term and it might be difficult for the focus group to interpret the specific reason for this selection result.

Recommendations - Nil

4) **Improved policy implementation: Proactive enforcement of existing laws, regulations and guidelines on nature conservation and environmental protection –** this recommendation was considered important to improve policy implementation. For example, it would minimize numerous illegal dumpling incidents in recent years which resulted in habitat disturbance without proactive enforcement.

Recommendations

4.1 Although members acknowledged the Waste Disposal Ordinance was updated to tackle the issue, it was suggested that the prosecution figures should be reviewed to determine the effectiveness of the current enforcement mechanism and measures before further actions are proposed.

4.2 The effectiveness of control under other ordinances, such as Town Planning Ordinance, Lands (Miscellaneous Provisions) Ordinance (Cap.28) should also be reviewed. In particular, it was suggested to review the implementation of reinstatement notices issued under the TPO to examine whether the damaged sites are successfully reinstated by the land owners.

4.3 More staff and resources should be deployed in the enforcement arrangement to strengthen the control on eco-vandalism.

5) Improved policy implementation: Education and public engagement – this was selected as one of the five most important recommendations for the impact of habitat/ecosystem modification/fragmentation only. Focus group considered that the reason for this recommendation was similar to the above in which education and public engagement can improve/ensure legislative compliance (e.g. no illegal dumping is allowed).

Recommendations – Bring forward to and elaborated by the Education Focus Group.

As discussed in the meeting, it was also worth noting other selected recommendations. Some member considered it necessary to recommend the implementation of ecological risk assessment in Hong Kong from an ecotoxicology perspective (e.g. Environmental Monitoring & Audit for Contaminated Mud Pit V at Sha Chau by CEDD).

5 SUMMARY OF PROPOSED RECOMMENDATIONS / ACTIONS

Based on the survey recommendations as discussed in Section 4, the following actions have been defined and would be brought forward to the Working Group for deliberation:

- Consider strategic environmental issues in major planning and sectoral studies to facilitate integration of environmental considerations at an early stage of formulation of plans or programmes.

- Continue to implement/ enhance environmental impact assessment (EIA) process and develop assessment tools to mitigate significant ecological impacts of development projects.

- Ensure new strategic initiatives or major programmes which may bring about noticeable or persistent implications on the economic, environmental and social conditions of Hong Kong are subject to sustainability assessments.

- Develop guidelines and/or best practice to ensure effectiveness of the ecological mitigation measures especially species translocation and wetland compensation.

- Raise public awareness and education on activities that would result in adverse impacts to habitats.

The abovementioned actions are considered relevant in meeting the Aichi Biodiversity Targets as stated in Section 1.2 in terms of minimizing the loss of natural habitats (ABT5) and anthropogenic pressures (ABT10).

6 CONCLUSION

An online questionnaire was developed to compile an evaluation of impacts by different stakeholders and their opinions on important measures for addressing the most significant impacts and uplifted public expectations. The three most significant impacts and the associated five recommendations were identified and further elaborated. The results of this exercise would be put forward to the TBWG for consideration.

Annex I – List of Impacts and Recommendations

IA: Impacts[1] on Terrestrial Biodiversity (within a timescale of 10 years)

1. Habitat Loss Due to Human Development - Recreational Uses (e.g. bathing beach, golf course)
2. Habitat Loss Due to Human Development - Residential Uses (e.g. housing development)
3. Habitat Loss Due to Human Development - Commercial Uses (e.g. industrial estate)
4. Habitat Loss Due to Human Development - Utility (e.g. power plant, renewable energy)
5. Habitat Loss Due to Human Development - Infrastructure (e.g. railway, airport, roadworks)
6. Habitat Loss Due to Natural Process - Succession (e.g. grassland to shrubland, mudflats to mangrove)
7. Exploitation of Terrestrial and Freshwater Ecological Resources through Agriculture Practices
8. Exploitation of Non-wood Terrestrial and Freshwater Ecological Resources (Animals, Plants, Fungi) through Hunting and Gathering (including unintended impacts)
9. Exploitation of Wood Resources through Logging and Wood-harvesting (including unintended impacts)
10. Exploitation of Marine Ecological Resources through Recreational Fishing
11. Exploitation of Marine Ecological Resources through Commercial Fishing
12. Habitat/Ecosystem Modification/Fragmentation and other Associated Disturbance Through Direct Human Activities (including changes in water abstraction and fire regime)
13. Geological Events (volcanoes, tsunamis, landslides)
14. Impacts of Problematic Species, Genes and Diseases (native or alien)
15. Water Pollution Through Wastewater from Domestic/Urban Uses
16. Water Pollution Through Wastewater from Industrial Uses
17. Water Pollution Through Wastewater from Agricultural Uses
18. Waste Generation from Municipal Solid Waste
19. Waste Generation from Construction Waste
20. Air Pollution
21. Noise Pollution
22. Light Pollution
23. Climate Change and Severe Weather

[1] The list was modified based on the IUCN Threats Classification Scheme (Version 3.2). Available at *http://www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme*

IB: Recommendations to Resolve or Minimize the Selected Impacts

1. Review: Existing laws, regulations and guidelines on nature conservation and environmental protection
2. Improved policy implementation: Governance
3. Improved policy implementation: Planning and Strategic Environmental Assessment
4. Improved policy implementation: Environmental Impact Assessment
5. Improved policy implementation: Interagency cooperation
6. Improved policy implementation: Patrolling and monitoring (in situ)
7. Improved policy implementation: Patrolling and monitoring (ex situ)
8. Improved policy implementation: Active biodiversity management (in situ)
9. Improved policy implementation: Active species management (ex situ)
10. Improved policy implementation: Proactive enforcement of existing laws, regulations and guidelines on nature conservation and environmental protection
11. Improved policy implementation: Training and capacity building
12. Improved policy implementation: Education and public engagement
13. Improved policy implementation: Ecological restoration (project based and small scale)
14. Improved policy implementation: Ecological restoration (landscape level)
15. Improved policy implementation: Alternative livelihood provision
16. New policy: Ecological Risk Assessment (local scale)
17. New policy: Ecological Risk Assessment (regional scale)

Annex II – Results of the Questionnaire Survey

IIA: Respondent's Background Information

1. Working in the Environmental Field & Hong Kong

Response	**Environmental Field**	**Hong Kong**
Yes	85 (91.4%)	92 (98.9%)
No	8 (8.5%)	1 (1.1%)
Total Answered	*93*	*93*
Not Answered	*5*	*5*

2. Environmental Fields

Environmental Fields	**% of Response**	**No. of Response**
Non-Governmental Organisations	29.0%	27
Government Departments	17.2%	16
Project Proponents – Utilities (Power, Renewable Energy)	0.0%	0
Project Proponents – Infrastructure (Airport, Railway, Roadworks)	6.5%	6
Project Proponents – Building Developers	0.0%	0
Environmental Consultants	24.7%	23
Construction Industries	6.5%	6
Educational Institutes	7.5%	7
Business Sector	2.2%	2
Financial / Banking Industries	1.1%	1
Others*	5.4%	5
Total Answered		*93*
Not Answered		*5*

*Including Consulting Engineer, Media, Law, NGO & Project Proponent and Town Planning

3. Years of Experience in Environmental Field

Years of Experience	**% of Response**	**No. of Response**
1 – 5 years	17.6%	16
5 – 10 years	14.3%	13
10 – 15 years	17.6%	16
>15 years	45.1%	41
N/A (for those non practitioners)	5.5%	5
Total Answered		*91*
Not Answered		*7*

4. Field of Expertise (43 respondents answered)

No.	Response
1	EM&A, Noise
2	Conservation, Zoology, Ecology
3	Plant conservation
4	Conservation, sustainable living, zoology, ants, land vertebrates, community ecology
5	EIA, waste, carbon
6	Corporate sustainability, EIA, noise, air, water & waste
7	Conservation, EIA, ecology, research
8	Ecology, EIA
9	Project management, EIA
10	PM, Project implementation, construction management, water infrastructure
11	Sustainability
12	Energy Management
13	EIA, EM&A
14	EIA
15	Conservation, Environmental Management
16	EIA
17	EIA, Water, Marine Environment
18	Pollution controls, EIA, waste management
19	EM&A
20	Water treatment and monitoring
21	Conservation, EcoIA, habitat management
22	Nature conservation
23	Conservation and education
24	Ecology specialist EIA, EM&A
25	Environmental Education, Sustainable Agriculture and Community Development
26	LVIA
27	Studied Environmental Impact Assessment at University while setting up my environmental NGO
28	EIA, EM&A, project management noise, air, BEAM, LEED green building, environmental engineering
29	Conservation advocacy and infrastructure management
30	Nature conservation
31	Marine ecology and conservation, EIA
32	EIA, EM&A, Project Management, Noise, Water Quality, Green Building
33	EIA, EM&A, Project Management, Noise and vibration

No.	Response
34	EIA, Noise
35	Air, odour, environmental engineering
36	EIA, EM&A and ecology
37	EIA, Ecology, EM&A, Air, Noise, Water
38	EIA
39	EIA, ecological survey, environmental management
40	Conservation and EIA
41	EIA, EM&A and ecology
42	Nature conservation, biodiversity
43	EIA, EM&A

IIB: Evaluation of Impacts

No.	Impacts	No. of Response in Significance Ranking (1=Most Significant, 5=Least Significant)					Total Weighted Score[1]	%[2]
		1	2	3	4	5		
1	Habitat Loss Due to Human Development - Recreational Uses (e.g. bathing beach, golf course)	0	0	5	1	4	21	12%
2	Habitat Loss Due to Human Development - Residential Uses (e.g. housing development)	46	12	7	6	1	312	88%
3	Habitat Loss Due to Human Development - Commercial Uses (e.g. industrial estate)	1	2	2	4	6	33	18%
4	Habitat Loss Due to Human Development - Utility (e.g. power plant, renewable energy)	0	3	1	1	6	23	13%
5	Habitat Loss Due to Human Development - Infrastructure (e.g. railway, airport, roadworks)	13	33	12	5	3	246	80%
6	Habitat Loss Due to Natural Process - Succession (e.g. grassland to shrubland, mudflats to mangrove)	0	0	2	4	2	16	10%
7	Exploitation of Terrestrial and Freshwater Ecological Resources through Agriculture Practices	0	1	2	0	0	10	4%
8	Exploitation of Non-wood Terrestrial and Freshwater Ecological Resources (Animals, Plants, Fungi) through Hunting and Gathering (including unintended impacts)	0	2	2	1	4	20	11%
9	Exploitation of Wood Resources through Logging and Wood-harvesting (including unintended impacts)	0	1	0	1	0	6	2%
10	Exploitation of Marine Ecological Resources through Recreational Fishing	0	0	0	0	0	0	0%
11	Exploitation of Marine Ecological Resources through Commercial Fishing	1	3	2	1	1	26	10%
12	Habitat/Ecosystem Modification/Fragmentation and other Associated Disturbance Through Direct Human Activities (including changes in water abstraction and fire regime)	8	9	15	8	6	143	56%
13	Geological Events (volcanoes, tsunamis, landslides)	0	0	0	1	0	2	1%
14	Impacts of Problematic Species, Genes and Diseases (native or alien)	0	0	1	4	7	18	15%
15	Water Pollution Through Wastewater from Domestic/Urban Uses	0	0	2	4	3	17	11%
16	Water Pollution Through Wastewater from Industrial Uses	0	0	0	1	0	2	1%
17	Water Pollution Through Wastewater from Agricultural Uses	0	0	0	0	1	1	1%
18	Waste Generation from Municipal Solid Waste	2	2	5	5	1	44	18%
19	Waste Generation from Construction Waste	0	0	2	3	3	15	10%

No.	Impacts	No. of Response in Significance Ranking (1=Most Significant, 5=Least Significant)					Total Weighted Score[1]	%[2]
		1	**2**	**3**	**4**	**5**		
20	Air Pollution	6	3	1	4	4	57	22%
21	Noise Pollution	0	0	0	2	0	4	2%
22	Light Pollution	0	0	2	2	1	11	6%
23	Climate Change and Severe Weather	5	2	5	4	8	64	29%
	Total Answered	*82*	*73*	*68*	*62*	*61*		
	Not Answered	*16*	*25*	*30*	*36*	*37*		

Remarks:

1. The total weighted score for each impact was calculated based on the number of response times the relevant impact weighting. Weighting of 1st Impact = 5, Weighting of 2nd Impact = 4, Weighting of 3rd Impact = 3, Weighting of 4th Impact = 2, Weighting of 5th Impact = 1.
2. % = percentage of the total number of respondents selected the concerned impact as one of the five significant impacts.
3. The three most significant impacts were highlighted.

IIC: Recommendations to Resolve/Minimise the No. 1 (Most Significant) Impact

– Habitat Loss Due to Human Development - Residential Uses (e.g. housing development)

No.	Recommendations	Total Weighted Score[1]	%[2]
1	Review: Existing laws, regulations and guidelines on nature conservation and environmental protection	634	14.3%
2	Improved policy implementation: Governance	564	12.7%
3	Improved policy implementation: Planning and Strategic Environmental Assessment	906	20.4%
4	Improved policy implementation: Environmental Impact Assessment	339	7.6%
5	Improved policy implementation: Interagency cooperation	244	5.5%
6	Improved policy implementation: Patrolling and monitoring (in situ)	151	3.4%
7	Improved policy implementation: Patrolling and monitoring (ex situ)	28	0.6%
8	Improved policy implementation: Active biodiversity management (in situ)	187	4.2%
9	Improved policy implementation: Active species management (ex situ)	51	1.1%
10	Improved policy implementation: Proactive enforcement of existing laws, regulations and guidelines on nature conservation and environmental protection	536	12.1%
11	Improved policy implementation: Training and capacity building	48	1.1%
12	Improved policy implementation: Education and public engagement	120	2.7%
13	Improved policy implementation: Ecological restoration (project based and small scale)	93	2.1%
14	Improved policy implementation: Ecological restoration (landscape level)	163	3.7%
15	Improved policy implementation: Alternative livelihood provision	60	1.4%
16	New policy: Ecological Risk Assessment (local scale)	208	4.7%
17	New policy: Ecological Risk Assessment (regional scale)	105	2.4%

Remarks:

1. The total weighted score for each recommendation was calculated based on the number of response times the relevant impact weighting and the relevant recommendation weighting. Weighting of 1st Impact = 5, Weighting of 2nd Impact = 4, Weighting of 3rd Impact = 3, Weighting of 4th Impact = 2, Weighting of 5th Impact = 1. Weighting of 1st Recommendation = 5, Weighting of 2nd Recommendation = 4, Weighting of 3rd Recommendation = 3, Weighting of 4th Recommendation = 2, Weighting of 5th Recommendation = 1.
2. The percentages of the total number of respondents vary across each impact with the corresponding recommendations and therefore are not presented. % = percentage of the total weighted score.
3. The total number of answered/not-answered response varies for the impacts selected and are therefore not presented.
4. The five most important recommendations were highlighted.

IID: Recommendations to Resolve/Minimise the No.2 Significant Impact

– Habitat Loss Due to Human Development - Infrastructure (e.g. railway, airport, roadworks)

No.	Recommendations	Total Weighted Score[1]	%[2]
1	Review: Existing laws, regulations and guidelines on nature conservation and environmental protection	196	8.9%
2	Improved policy implementation: Governance	230	10.5%
3	Improved policy implementation: Planning and Strategic Environmental Assessment	500	22.7%
4	Improved policy implementation: Environmental Impact Assessment	301	13.7%
5	Improved policy implementation: Interagency cooperation	114	5.2%
6	Improved policy implementation: Patrolling and monitoring (in situ)	88	4.0%
7	Improved policy implementation: Patrolling and monitoring (ex situ)	22	1.0%
8	Improved policy implementation: Active biodiversity management (in situ)	92	4.2%
9	Improved policy implementation: Active species management (ex situ)	58	2.6%
10	Improved policy implementation: Proactive enforcement of existing laws, regulations and guidelines on nature conservation and environmental protection	162	7.4%
11	Improved policy implementation: Training and capacity building	14	0.6%
12	Improved policy implementation: Education and public engagement	44	2.0%
13	Improved policy implementation: Ecological restoration (project based and small scale)	62	2.8%
14	Improved policy implementation: Ecological restoration (landscape level)	72	3.3%
15	Improved policy implementation: Alternative livelihood provision	13	0.6%
16	New policy: Ecological Risk Assessment (local scale)	154	7.0%
17	New policy: Ecological Risk Assessment (regional scale)	98	4.5%

Remarks:

1. The total weighted score for each recommendation was calculated based on the number of response times the relevant impact weighting and the relevant recommendation weighting. Weighting of 1st Impact = 5, Weighting of 2nd Impact = 4, Weighting of 3rd Impact = 3, Weighting of 4th Impact = 2, Weighting of 5th Impact = 1. Weighting of 1st Recommendation = 5, Weighting of 2nd Recommendation = 4, Weighting of 3rd Recommendation = 3, Weighting of 4th Recommendation = 2, Weighting of 5th Recommendation = 1.
2. The percentages of the total number of respondents vary across each impact with the corresponding recommendations and therefore are not presented. % = percentage of the total weighted score.
3. The total number of answered/not-answered response varies for the impacts selected and are therefore not presented.
4. The five most important recommendations were highlighted.

IIE: Recommendations to Resolve/Minimise the No.3 (Most Significant) Impact

– Habitat/Ecosystem Modification/Fragmentation and other Associated Disturbance Through Direct Human Activities (including changes in water abstraction and fire regime)

No.	Recommendations	Total Weighted Score[1]	%[2]
1	Review: Existing laws, regulations and guidelines on nature conservation and environmental protection	201	9.4%
2	Improved policy implementation: Governance	177	8.3%
3	Improved policy implementation: Planning and Strategic Environmental Assessment	261	12.2%
4	Improved policy implementation: Environmental Impact Assessment	103	4.8%
5	Improved policy implementation: Interagency cooperation	129	6.0%
6	Improved policy implementation: Patrolling and monitoring (in situ)	159	7.4%
7	Improved policy implementation: Patrolling and monitoring (ex situ)	40	1.9%
8	Improved policy implementation: Active biodiversity management (in situ)	155	7.2%
9	Improved policy implementation: Active species management (ex situ)	28	1.3%
10	Improved policy implementation: Proactive enforcement of existing laws, regulations and guidelines on nature conservation and environmental protection	259	12.1%
11	Improved policy implementation: Training and capacity building	34	1.6%
12	Improved policy implementation: Education and public engagement	182	8.5%
13	Improved policy implementation: Ecological restoration (project based and small scale)	133	6.2%
14	Improved policy implementation: Ecological restoration (landscape level)	107	5.0%
15	Improved policy implementation: Alternative livelihood provision	0	0.0%
16	New policy: Ecological Risk Assessment (local scale)	88	4.1%
17	New policy: Ecological Risk Assessment (regional scale)	89	4.1%

Remarks:

1. The total weighted score for each recommendation was calculated based on the number of response times the relevant impact weighting and the relevant recommendation weighting. Weighting of 1st Impact = 5, Weighting of 2nd Impact = 4, Weighting of 3rd Impact = 3, Weighting of 4th Impact = 2, Weighting of 5th Impact = 1. Weighting of 1st Recommendation = 5, Weighting of 2nd Recommendation = 4, Weighting of 3rd Recommendation = 3, Weighting of 4th Recommendation = 2, Weighting of 5th Recommendation = 1.
2. The percentages of the total number of respondents vary across each impact with the corresponding recommendations and therefore are not presented. % = percentage of the total weighted score.
3. The total number of answered/not-answered response varies for the impacts selected and are therefore not presented.
4. The five most important recommendations were highlighted.