

Project Title: ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS

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Abstract	The deliverable describes the ethics review process starting from the identification of the relevant ethical issues regarding the project activities. It describes concrete procedures for two examples of personal data collections with a graduation of actions, according the ethical relevance.
Keywords	Ethics issues, personal data, social-oriented studies.







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1. Executive summary

The ECOPOTENTIAL mid-term ethics report has a three-fold objective.

- 1. it reports why and where in the Grant Agreement it is foreseen a data collection which may rise ethical issues
- 2. it describes the procedures implemented for the data processing and provides a copy of the approvals for the collection of personal data by the competent Data Protection authority.
- 3. it includes the questionnaire the data collection has been based upon
- 4. it identifies the open issues to be addressed in the further implementation of the work-plan.

A further, final ethics report will be delivered at the end of the project.





2. From the GA : ethical issues in ECOPOTENTIAL

Protection of personal data, participation of non-EU countries and collection of environmental data in Protected Areas are the issues potentially related to the project activities. The following text, extracted from the GA, contains a preliminary description of the ethical issues related to the Consortium composition and to the implementation of the activities in ECOPOTENTIAL:

"The ECOPOTENTIAL Consortium will work in several Protected Areas across the EU and in five Protected Areas that include non-EU territories (Norway, Israel, Former Yugoslav Republic of Macedonia - FYROM, South Africa and parts of the Caribbean Large Marine Ecosystem). A list of proposed sites can be found in Table 1.1 of the Technical Annex, Part B.1.

All activities within ECOPOTENTIAL will strictly adhere and comply with national/local guidelines/legislation. The ECOPOTENTIAL activities in the Protected Areas will be carried out and agreed upon with the Protected Area managements. In fact, many Protected Areas authorities directly participate in the ECOPOTENTIAL Consortium. A full review of relevant national/local regulations, guidelines and legislations for working in individual PAs will be performed by site leaders (Table 1.1) and collected in a report to the Consortium Coordination Team by Month 3. The Consortium Coordination Team will make any necessary changes in the workplan during their first meeting in Month 4. In extreme cases (which are highly unlikely), some Protected Areas will be removed and/or replaced by other Protected Areas while maintaining the coverage of ecosystems and biogeographical regions in the project. ECOPOTENTIAL positively addresses the ethic challenge related to the preservation of the natural capital and natural heritage, of the environment and ecosystem functions and processes, of biodiversity and ecosystem services for the future of mankind. ECOPOTENTIAL is building on EO and monitoring data, on modelling and on scientific analyses to support and further develop an ethical attitude towards natural ecosystems, where ecosystem benefits and services remain sustainable for long periods of time and human actions are respectful of the natural environment.

Regarding the survey addressed to the technical staff of the protected areas participating in the project and from other territorial entities which will contribute to the Ecosystem Community of Practice, it will concern solely professional activities and never deals with personal data or preferences as defined by Art. 2 of the Directive 95/46/EC. The survey will be based on a technical template and the technical personnel invited to participate will be informed with a written notice about the usage of the information gathered in the survey. As said above, the questions will concern the professional activities and in particular the use of and the need for EO and in-situ data in territorial management.

Partly, ECOPOTENTIAL research will involve non-EU countries: Australia, South Africa, Switzerland, Norway, Israel, FYROM.

Australia, Switzerland, Norway and Israel are high income countries (World Bank classification) and OECD members. Norway is part of the European Economic Area. Norway, Israel, FYROM are Associated Countries of the EU. As such, there is a very low risk involved in conducting R&I actions in these countries.

Fair benefit-sharing arrangements with stakeholders from ICPC are ensured during the project. We remark that most of the ECOPOTENTIAL deliverables are public and will be made available on the project website. EO data and products sharing, might be limited by licensing constraints depending on data providers' policies not controlled by the ECOPOTENTIAL consortium. A unique strategy for stakeholders involvement will be adopted throughout the project activities. The ECOPOTENTIAL beneficiaries from ICPC have well established relationships with the stakeholder community of reference, thus ensuring a fair benefit-sharing of the ECOPOTENTIAL's results.

South Africa and FYROM are upper middle income countries, posing slightly larger risk. However, in both countries, research will be lead and coordinated by nationally renowned and experienced local partners (CSIR and HIO, respectively). We do not foresee any complex ethical issues arising from ECOPOTENTIAL work in those non-EU countries.

ECOPOTENTIAL will be compatible with EU and international laws.

Any ethics issue, not previously considered, which might arise during the project lifetime will be described together with the necessary actions, in two ethics reports to be delivered in the mid term and at the end of the project."



ECOPOTENTIAL - SC5-16-2014- N.641762



In ECOPOTENTIAL, each partner is responsible for research ethics relating to the implementation of her/his tasks. The partners are responsible for ensuring and documenting that these issues have been addressed, including designated tasks like obtaining approval from relevant data protection authorities. The role of the project management team is to assist the partners in this endeavour and to verify if the obligations are maintained throughout the project period. The purpose of the present report is to identify the ethical issues in the project activities, to document the procedures followed to fulfil the obligations and to plan corrective actions whenever appropriate.

2.1 Data collection: which data?

According to the work-plan, the data collected in ECOPOTENTIAL which might rise ethical issues are essentially of two types: a) environmental data and b) personal data.

- a) Environmental data: Although the project aims at using existing in-situ data, in-field campaigns are occasionally planned, mainly for validation of the modelling and remote sensing products. With respect to the Ethics issues checklists contained in the EU "Guidance: how to complete your ethics self-assessment¹", the concerned section is Section 7: Environments& Health and Safety, and the specific question, positively answered, according to the project activities is the following: "Does your research deal with endangered fauna and/or flora/protected areas?". As a matter of fact, all the data are collected in Protected Areas and in some cases endangered species might be interested.
- b) <u>Personal data</u>. This is data coming from surveys carried on in ECOPOTENTIAL, of two types:
 - Internal surveys or surveys addressed to Protected Areas (PA) managers directly involved in the project even if not formally engaged as beneficiaries;
 - Surveys addressed to the general public.

2.2 Environmental data

Among the criteria for the selection of the Protected Areas as study sites for the project, there is the existence of a long-term collaboration among the PA personnel and a contact research organization, partner of the project, in order to ensure the access to the site and to relevant ecological data. To our knowledge, no authorisation process, specific to the project activities, has become necessary. All the research activities are being carried on regularly since years, in compliance with the legislation on nature conservation (including the EU Habitats Directive 92/43/EEC, the EU Wild Birds Directive 79/409/EEC, EU Regulation (EC) No 338/97 on protection of wild fauna, the EU GMO Directive 2009/41/EC and the Cartagena Protocol on Biosafety)

The ECOPOTENTIAL community is aware of the fact that the full accessibility of EO data (both satellite and in-field) may interfere with the conservation goals in protected areas especially if endangered species are interested by the data collection. For that reason the ECOPOTENTIAL data policy, agreed by the Consortium and contained in the milestone document M5.1, acknowledges the possible sensitive nature of the ecological data and states the followings about their treatment:

"4.6 **Sensitive data**. For all Data providers have to specify any sensitive data contained in the data collections served by them. Sensitive data will be kept separately from all other data available in the ECOPOTENTIAL portal and will be made accessible only for restricted use (see 4.2 below). The qualification

¹ <u>http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf</u>





as sensitive data is only allowed for data whose free accessibility could endanger certain aspects of ecosystem conservation (e.g. data on precise locality of endangered species) or for data that are qualified as confidential by the competent national, European or international administration."

2.3 Personal data

Internal surveys are a common tool in the project, and they are used to improve the workflow, to share the knowledge, to plan internal capacity building events, to define the boundaries of cross-disciplinary research. Exploiting the size and the representativeness of the ECOPOTENTIAL research community, after anonymization, some basic statistics has been performed on the survey outcomes and results have been included in a public deliverable. No specific measures have been adopted since the data, even if personal in the broad sense (Article 2(a) of EU Directive 95/46/EC, were strictly related to professional activities within the project.

As foreseen in the GA, the project activities include also surveys addressed to a specific class of stakeholders, namely the managers and the personnel of the project PAs. Questionnaires have been used in WP11 and WP12 to generate the analysis contained in the deliverables D11.1 (Research outputs as needed by stakeholders) and D11.2 (Synthesis study on integration of EO data/tools in decision making).

In WP9, personal data are being collected in interviews addressed to the PA staff, aiming at the definition of the requirements for present and future Protected Areas.

Apart from contact details, in most of the cases (office e-mail and phone number) publicly available, the data collected concerns the professional activities of the research participants.

3. Case I: interviews with the Protected Areas managers

In Annex I, the questionnaire elaborated in WP9 in collaboration with WP12 provides an example of the surveys addressed to the personnel of the PAs. The questionnaire is complemented by a consensus form for the collection of personal data (name, affiliation, contact details). The research participants are active members of the Ecosystem Community of Practice established according the project workplan. Due to the survey target audience and to the content, no authorization procedure has been implemented. Only aggregated, anonymous data have been shared within the Consortium. Data have been collected, and stored in the respect of the privacy regulations at the premise of the partner responsible for the survey.

4. Case II: Social-oriented study

There is a single case of social-oriented studies, carried on by the Israel Institute of technology, in the Protected Area of Har HaNegev (Israel). The study focused on the aesthetic value of a landscape as perceived by both the local communities and the tourists visiting the area. The questionnaire adopted for the survey is reported in Annex II.

In order to address the ethical issues in social-oriented studies, the relevant rules to be taken into account are the followings:

a) necessity (the data collection has to be properly motivated);

b) authorization (as regulated by law);

c) consent (the research participants have the right to understand and give the consensus to the data collection) and d) the right to withdraw (the data collection may be terminated any time and the data may be requested to be destroyed.).

For the case at hand, the motivated request (see Annex II) has been addressed to the Social & Behavioral Sciences Institutional Review Board of the Technion-Israel Institute of Technology (according with the national regulation), and the survey has been approved with Approval Number 2016 - 48. Finally, we report





in Annex III the consent form and the form that the researcher responsible of the study has to sign to declare that nothing in the proposed study would cause harm to the subject(s) and their environment.

5. Remarks – open issues

Information about the ethical issues and the correct way to deal with has been provided at any project general meeting with the help of the tools and the guides provided within the H2020 programme. Ethical issues are regularly discussed in the meetings of the Consortium Coordination Team composed by WP leaders and members with technical expertise on crucial aspects of the project.

Although there is a general awareness of the importance of an ethical review of the activities, and a substantial correctness of the undertaken actions, it is not always easy to establish a proportionality in the strict application of the rules with respect to the relevance of the ethical issues. During the third year of the project the coordination team will conduct an ethical screening of the past and future activities to identify possible violations and corrective actions.





6. Annex I: Questionnaire WP9-12

Questionnaire for Work Package 9, on requirements of protected areas and for Work Package 12, on citizen science in protected areas

Date		
Name of the represented Protected Area (PA)		

Questionnaire respondent	PA manager	Researcher	

Parts of the questionnaire in light grey are optional and are either:

- Prefilled: could you verify and / or complete the information if possible?
- Answered in a later stage: if you do not have the answer, could you provide documents where to find it or the contact of persons who could have the information?

Questionnaire structure:

PART A: Protection measures, governance and management	10
PART B: Environment	17
PART C: Economic development	19
PART D: Social and cultural development	
PART F: What doES your PA need from ECOPOTENTIAL?	
PART E: Information on citizen science in the PA	30

<u>Privacy</u>: In the survey you are requested to provide certain personal data to ECOPOTENTIAL (namely: name, email, telephone, address details, affiliation). ECOPOTENTIAL and its partners respect the privacy of all the participants to the survey and ensures that all personal information which you will give us, will be dealt with following the rules below.

The collected personal data information will never be provided to third parties without your explicit unambiguous consent. Although eventually all data in ECOPOTENTIAL will be available for open access, the (personal) data will be excluded in case you did not agree on sharing those data. To this end, at the start of the survey we ask you to indicate which option you want to follow for using the personal data and the (other) general data on your PA.

You can indicate the following options:

Type of use	Your personal data	The general data	Remarks
	yes = agree; no = not agree	yes = agree; no = not agree	(specific conditions
			for use)
Data can be freely used by ECOPOTENTIAL partners			
Data can be freely used by third parties			

At any moment you can request to remove your personal data out of our files.

<u>Disclaimer</u>: The content of this survey has been compiled with the utmost care in the frame of the ECOPOTENTIAL project. Responsible partners for this survey are Christiaan Hummel MSc and Prof. Dr. Herman Hummel (lead) of the Royal Netherlands Institute for Sea Research (NIOZ), Yerseke, the Netherlands, and Yolande Boyer MSc (main author) and Dr. Rutger de Wit of the University of Montpellier (UMontpellier), France. Although ECOPOTENTIAL and the responsible partners aim to keep the information of the survey in its repositories permanently as accurate and up-to-date as possible, changes to the information are always reserved. ECOPOTENTIAL and its partners are in no way responsible and shall not be liable for any claims or damages that are the direct or indirect consequence of or in connection with the use of the information available in this survey.

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PART A: PROTECTION MEASURES, GOVERNANCE AND MANAGEMENT

A.1 Surface, Ownership, and Existential reason of PA (studied in ECOPOTENTIAL)

A.1.1 Basic information

	Date	Surface of PA (ha)
PA creation		
PA expansion		

PA category (in own national system)

➤ A.1.2 IUCN category

	PA equivalent IUCN category
la Strict Nature Reserve	
Ib Wilderness Area	
II National Park	
III Natural Monument or Feature	
IV Habitat/Species Management Areas	
V Protected Landscape/Seascape	
VI Protected Area with Sustainable use of natural resources	

A.1.3 Property regimes

		Surface (ha)	Number of owners
Private	Individual owners		
property	NGOs aiming to protect the PA		
Public	State		
property	Regional body		
	Provincial body		
	Municipality		

	Yes	No	1
Available document with information or available GIS document with boundaries			

A.1.4 Dependency of PA Status

Is the status and existence of your PA mainly related to (dependent on) natural values of the environment, to specific Ecosystem Services derived from the area, or to specific social/cultural elements?

Status of PA	Specify shortly the	Importanc	е				
depends mainly on:	major contributor	Very high	High	Average /	Little /	Very	Not present /
	to the value			moderate	small	small	not mentioned
Natural							
environmental							
values							
Value of specific							
Ecosystem Services							
Value of specific							
socio-cultural							
elements							
Other specific value							

* Examples of major natural environmental values are the presence of specific species (e.g. whales) or habitats (rocky mountains), of specific Ecosystem Services derived from the area e.g. tourism or fishing, and of specific social/cultural elements e.g presence of a castle, old salt-mine.





> A.2 Overlapping protection measures

> A.2.1 Regulations / restrictions areas in the PA

	Surface in the PA (ha)	Document	t with i	information
Area where entry is not allowed				
Area where hunting is not allowed				
Area where fishing is not allowed				
Area where agriculture and livestock farming are not allowed				
Area where constructions are not allowed				
Area where mining, quarrying or factories are not allowed				
		Yes	No	
Available document with information or available GIS document wit				

> A.2.2 Environmental protection measures implemented on the PA studied in ECOPOTENTIAL

Protection measure	Protection	Surface	Purpose	Creation and	Duration	Requirements	Major property ownership		Document with
category	designation	PA (ha)		dates			Private (nr. owners?)	Public	contact person
International									
treaties									
European									
National regulatory protection									
National contractual protection									
National label									
National territorial planning and protection measures									
Other protection instruments planned									





> A.3 PA management structure

> A.3.1 Management structure type

	public	private	
Type of PA management structure			

	the State	Regional	Provincial	Municipal
		authorities	authorities	authorities
If it is a public structure, what is				
the level on which it depends?				

> A.3.2 Local community involvement in the management structure

	Yes	No
Is the local community directly involved in the PA management structure?		

➤ A.3.3 Initial purpose of the PA

Have the objectives and the purpose of the PA clearly been identified?	Yes	No	
If yes: can they be described in a few sentences?			

A.4 Funding, competences and equipment

> A.4.1 Sources and allocation of funding

Name of source of funding	of	Origin		Occurrence		Duration	Total funding		Main allocation	
	01	Public	Private	Recurrent	Additional funding from fund-raising (i.e. EU Life, Med and Interreg projects,)		(estimate	(estimate/year)		gung

Document(s) with information or contact(s) person(s) about funding:

> A.4.2 Partnerships

How many partnership agreements do you have and with whom?									
Partner	Association	Public	Company	Other	Type of agreement				
	INGO	organisation							

Document(s) with information or contact(s) person(s):





> A.4.3 Number and competences of PA staff

How many persons are currently employed by the PA management structure?

Can you provide a breakdown in terms of professional categories, specialised tasks, skills and funding?

Professiona	Number of	Specialised tasks	Education-training	Contracts		
I categories	employees	or responsibilities	levels and skills	Short-term	Long-term/ continuing	

Document(s) with information or contact(s) person(s):

A.4.4 Training programmes

Are	specific	training	programs	NO 🗆	YES 🗆
offer	ed for the	PA manage	ers?		

IF YES :

Type of programmes	How many times a year	Duration			
Document(s) with information or contact(s) person(s):					

Are	specific	training	programs	NO 🗆	YES 🗆
need	ed for the	PA manag	ers?		
IF YE:	S: What ar	e the need	s in training	?	

> A.4.5 Facilities and equipment

Type of PA facilities	Size			Construction	Last	Name of available
used for management	Small:	Medium:	Big: more	date if	renovation	document with this
(garage, office etc.)	0 to 50m ²	50 to 300m ²	than 300m²	possible	date if	information?
					possible	

Other	PA facilities	Number	Frequency of	use (days/y	ear)		Name	of	avai	ilable
and	important		For	For	Use in general (not possible to	docume	ent	with	this
equipn	nent		management	research	differentiate	management	informa	tion	?	
					and research)					
Ships										
Cars										
Others	(specify):									

Document(s) with information or contact(s) person(s):



➤ A.4.6 Communication within the PA staff Do you have meetings that involve all PA staff? YES □ NO □ If yes, how often in a year do you all meet? If no, do you have other communication ways where every PA staff member can participate? If yes, precise: Do you have separated meetings for a common group of the PA staff? VES □ YES □ NO □ Between which group of the staff? How frequently?

A.4.7 Regulations and law enforcement

How many park rangers or other kind of police are present in the PA	
to help enforcing laws, rules and regulations?	
How many do carry firearms?	
How often is there a situation where a ranger has to arrest someone	
or aim his rifle?	

> A.4.8 Advisory boards

Are	you	assisted in your work b	y advisory boards as e.g., a Scientific Cou	ncil of the PA?
No				
Yes		Type of board	Number of persons involved	Where are the persons from
-				
Doc	cum	ent(s) with information	or contact(s) person(s):	

> A.4.9 Level of funding

Is the level of funding that the PA receives enough to correctly manage the PA?						
Sufficiently: It is sufficient to	Not completely: The principal	No: The PA management	Not at all: There			
pay for the main actions/ jobs/	actions are paid but funding lacks	can go on but there is still	is a critical lack			
maintenance	for less urgent requirements	a big lack of funding	of funding			

Please classify the most important sectors to which you would allocate additional funding

Sector examples	Rating (1= the biggest need)
Staff	
Investment in new equipment	
Maintenance	
Environmental education	
New action project	
Continuation of current projects	
Other (specify:)	

Usually how many months or years do the PA managers know in advance that the PA will receive funds?

For how many months/years is it possible for PA managers to plan the PA projects in the future?



> A.4.10 Contribution of volunteers and students to the management

Does the PA	No	Yes	If yes:				
benefit from			Number	Average number of	Are they	If paid, which organisation f	unds them:
the help of:			/year	months / person	paid?	the PA managing structure	Another organisation
Students					Yes 🗆 No		
Volunteers					Yes 🗆 No		
Document(s) with information or contact(s) person(s):							

A.5 Management plan(s)

> A.5.1 Management targets

	Yes	No	If yes, which ones in particular?
Does it target the sustainable use of natural resources?			
Does it contribute to the control or mitigation of natural			
hazards (fires, inundation, etc.)?			
Does it target the conservation of specific species?			

> A.5.2 Management frameworks

	Yes	No
Does the PA management structure use an ecosystem service framework?		

		Yes	No	If yes, what is the duration of a typical cycle?
Does the PA manage	ement use the principle of adaptive			
management	(assess-plan-implement-monitor-			
evaluate-adjust)?				

➢ A.5.3 Connectivity

	National scale	Regional scale	Smaller scale (specify)
Does the management strategy/framework the PA use is relevant for:			
At which scale do criteria for connecting protected populations			
(connectivity) are an important asset for the PA?			

> A.5.4 Master plans (management strategy plans)

	Yes	No	If yes:				
			How many	Since when (for each)	Duration of validity		
Does a single or several							
Master Plans exist for the							
management of the PA?							
Document(s) with information or contact(s) person(s):							

> A.6 Monitoring and research

> A.6.1 PA involvement

	Yes	No
Is the PA involved in biodiversity and environmental variables monitoring?		
Is the PA involved in scientific research?		



> A.6.2 Importance of PA management team for determining needs

	Yes	No
Have the major needs for scientific research and monitoring been determined by the PA		
management team?		
If no, can you indicate what/who determined the research/monitoring (e.g. Natura 2000		
legislation, ministry, external scientists,) :		

> A.6.3 Detection of threats method

	Yes	No
Is there a specific method to detect and describe the threats to allow preventive action by the		
PA?		
If yes, can you give more information?		

> A.7 Involvement of stakeholders

> A.7.1 Key stakeholders

Stakeholders	Not	Somewhat	Involved (are	Very involved	Main stakeholders	Level of
	involved	involved	present to	(do actions,	(must always be	implication
		(are	meetings,	their opinion	represented, main	difficult to
		informed	take part to	is needed to	"voices" at meetings,	assess
		of the	decisions)	take	are the ones who do	
		decisions)		decisions)	the most actions)	
Municipal government(s)						
Provincial government(s)						
Regional government(s)						
National government(s)						
Private companies						
Local community						
Visitors						
NGOs						
Scientific institutions						
Public at large / citizens						

Do some stakehol	ders have disproportionate influence	ce in decision making processes?	
IF YES:			
\A/b e	Far which recease?	Increase of the in influence	

Yes	No

Who For which reason?				Importance of their influence					
	Ownership	Voting	Funding	Can block	Can make taking	Other:			
				actions	decisions difficult				

A.7.2 Stakeholders training

Do stakeholders benefit from information and / or training during their involvement in the PA's projects?





> PART B: ENVIRONMENT

B.1. Most important Ecosystem Functions and Ecosystem Structures

Can you indicate the most important Ecosystem Functions and Ecosystem Structures that play a role in your PA:

Ecosystem Structure	Specify (if possible)	Import	tance				
or Function		Very	High	Average /	Small	Very	Not present /
		high		moderate		small	not mentioned

* Examples of Ecosystem functions and structures are: Biodiversity, Carbon cycling, Nutrient dynamics, Climate regulation, Element cycling, Food chain energy transfer, Gene pool, Habitat (heterogeneity, suitability), Primary production (plants), Secondary production (animals), Population dynamics (density or growth of trees, recruitment of animals, flowering), Raw materials, Sediment characteristics, Salinity, Water dynamics

B.2. Most important Ecosystem Services

Can you indicate the most important Ecosystem Services that play a role in your PA, and what the benefits are:

Ecosystem Service	Specify the ES (and	Import	Importance					
	its benefit) if possible	Very high	High	Average / moderate	Small	Very small	Not present / not mentioned	

* Examples of Ecosystem Services are: Aesthetic qualities: Animals of economic use (cattle, fish aquaculture of oysters), Biodiversity conservation, Charismatic landscape, Charismatic species, Climate regulation, Education and research, Energy production, Fire Protection, Flood and coastal protection, Food provision for animals, Food provision for humans, Habitat for feeding and breeding (for fish or birds), Hunting, Hydrological regulation, Leisure activities, Materials of economic use (mining, salt), Plants of economic use (timber, fruits, grain), Pollination, Prevention of erosion, Raw materials (sand, gravel, shells), Resilience, Sedimentological regulation (soil protection, land incrementation), Spiritual significance, Transport facilitation, Waste and Toxicant mediation, Water regulation (fresh water storage)



B.3. Most important pressures

Can you indicate the most important pressures in your PA, that can form a threat to the afore mentioned Ecosystem Functions and Structures (question B1) or to the Ecosystem Services (question B2):

Pressure	Specify the	Impor	tance				
	pressure (if possible)	Very high	High	Average / moderate	Small	Very small	Not present / not mentioned

* Examples of Pressures/Threats are: (Illegal) human activities, Agriculture, Bad management, Change in land use, Change in species, Civil engineering, Climate change, Diseases, Disturbance, Encroachment, Eutrophication, Exotic species, Fire, Fisheries, Habitat loss, Harmful Algae, Hydrological changes, Increased salinisation, Industry, Landscape disturbance, Local policy and politics, Overexploitation, Pollution, Predation, Sediment dynamics changes, Tourism





> PART C: ECONOMIC DEVELOPMENT

> C.1 Territory use

What is the use of the territory implemented in the PA?											
Use of territory	Percentage of PA	Numbe	er of job	s provid	ed		Employ	yment	of	local	
	surface where this						community (%)				
	territory use is	0-50	50-	250-	500-	>1000	0-25	25-50	50-75	75-100	
	implemented		250	500	1000						
Mining and quarrying											
Water and waste											
treatment											
Energy production											
Industry and											
manufacturing											
Transport,											
communication networks					<u> </u>			<u> </u>			
Construction											
Commerce, finance,											
business					<u> </u>			<u> </u>			
Residential											
Arable land											
Permanent crops											
Pastures											
Heterogeneous											
agricultural areas											
Forestry											
Aquaculture and fishing											
Public services*											
Recreation, sport, tourism											
No-entry area											
Unused area											
Other, specify:											

* including hospitals, schools, town hall

Document(s) with information or contact(s) person(s):

In your opinion, what are the most important economic sectors in the PA?

C.2 Surrounding area* territory use

* 15 km² around the PA perimeter

What are the territory use implemented in the surrounding area of the PA?													
Territory use categories	Percenta	ge of th	e PA	Numb	er of jo	bs prov	ided		Emplo	yment	of	local	
	surface	surface where this								community (%)			
	territory	use	is	0-50	50-	250-	500-	>1000	0-25	25-50	50-75	75-100	
	impleme	nted			250	500	1000						
Artificial surfaces													
Agricultural areas, forestry,													
aquaculture and fishing													



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Recreation, sport, tourism					
Other, specify:					

Document(s) with information or contact(s) person(s):

> C.3 Pressures and threats

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C.3.1 Legal resource exploitation demand and tensions

	Importance								
	Not present	Very small	Small	Moderate	High	Very high			
Demand for legal resource exploitation									

Are there tensions regarding territory ownership, usage rights or resource exploitation?

> C.3.2 Illegal activities

		Importance								
		Not present	Very small	Small	Moderate	High	Very high			
Presence	Building of infrastructure									
of illegal	Extraction of non-renewable									
activities	natural resources (sand, mining									
	etc.)									
	Timber extraction									
	Agriculture and farming									
	Poaching									
	Fishing									
	Extraction of other biological									
	resources									
	Vandalism of cultural resources									
	Squatting									
	Recreational sports (disregard of									
	regulations against leaving paths,									
	base jumping, climbing, caving,									
	etc.)									
	Motorized access									
	Open fires									
	Drone flights									
	Other :									
Difficulty in	Difficulty in monitoring illegal activities within									
the PA										





Pressure	Specify	Impact	(Strer	gth/S	everity)			Percentage of Frequency (of occurrence) of impact area impacted						Pressure comes from activity	
		None	Very low	Low	Moderate	High	Very high	%	Very rare	Rare	Often	Very often	Contin uous	inside PA	outside PA
Agriculture								~~~ %	;́□						
								••• %	\mathbb{Z}						
Forestry								%							
								••• %							
Climate change								>••• %							
								···· %							
Invasive species								%							
								••• %							
Tourism								%							
								%							
Hunting								%							
								···· %							
Fishing								%							
								< <u> %</u>						<u>_</u>	
Mining, gas	,							···· %							
quarrying		<u> </u>						···· %	< < _						
Extraction of	f							••• %							
biological resources								%							
Industry		, 🗆						%						, 🗆	
								···· %							
Transport								···· %							
								~~~ %							
								%							

# > C.3.3 Importance of the pressures caused by different activities in the PA (over the past 5 years)

#### D1.4 Mid-term report on ethical issues



Landscape fragmentation				•••• %					
Other (specify)	<u> </u>			%	<u>/</u> / □			<u>,</u>	
Other (specify)				>*** %	/ 🖵			) L	





#### * Examples to C.3.3:

- Agriculture: intensity of water exploitation, pesticides, nutrients...

Tourism: environmental degradation (e.g. soil erosion, fire, eutrophication of water, camping sites, width of trails, garbage), disturbance of species (e.g. breeding birds), landscape aesthetics impacted e.g. at crowded parts
 Industry: solid waste, sewage, dangerous sites...

#### C.3.4 Political stability and corruption issues

The "corruption perception index" from the Transparency International NGO ranks countries based on how corrupt their public sector is perceived to be. In 2016, your country was ranked as ... / 173, with a score of ..., scores go from 0 (very corrupted) to 100 (no corruption). Do you think this reflects the situation to which the PA is confronted?

The "political stability index" issued from the World Bank, ranks countries by reflecting the likelihood of social conflicts and tensions. In 2016 your country was ranked as ... / 194 with a score of ..., scores go from -2,5 (weak political stability) to 2,5 (strong political stability). Do you think this reflects the situation to which the PA is confronted?

# C.4 Sustainable development

#### C.4.1 Ecolabels and Protected origin labels

List of Ecolabels and "Protected Origin" labels

#### > C.4.2 Organic farmers

List of "organic"	Size of expl	Size of exploitation in hectares									
farmers	[0; 10[	[10; 50[	[50; 100[	[100; 150[	More than 150						

Potential contacts for more information on these questions:

#### > C.4.3 Contribution of commercial tour operators to PA management

				Yes	No					
Do commercial tour operators contribute to protected area management?										
IF YES :										
How?	To a Low degree	To a Medium degree	To a Hig	n degre	e					
Funding										
Communication on PA										
Monitoring										
Other (specify)										

#### C.4.4 Contribution of fees to PA management

				Yes	No
If fees (i.e. entry fees, par	king fees or fines) are a	pplied, do they help the	PA management?		
IF YES :					
How?	To a Low degree	To a Medium degree	To a High degree		
Funding					
Communication on PA					
Monitoring					

 $\square$ 

 $\square$ 



Other (specify)



# PART D: SOCIAL AND CULTURAL DEVELOPMENT

> D.1 Recreational activities

# > D.1.1 List and rate of importance of recreational activities in the PA

	Importan	ce of th	e activ	ity in the P	4	Ranking of the importance of the activities	
	Not	Very	Small	Moderate	High	Very	in comparison with each other in the PA, the
	present	small				high	activity ranked "1" is the most practiced
Hiking							
Biking							
Horseback riding							
Kayaking / canoeing							
Surfing / kite surfing							
Paragliding							
Fishing							
Hunting							
Diving / snorkeling							
Animal watching							
Other (specify)							

# > D.1.2 Issues related to cultural ecosystem services of special interest for the management of the PA

	Please tick of interest	checkbox, (m	nultiple	answers po	ossible)	on level of
	Not present	Very small	Small	Moderate	High	Very high
Spatial distribution of visitors						
Hotspots of visitor interest						
Socioeconomic characteristics of user groups						
Cultural ecosystem services searched by PA-visitors						
Threat to PA due to overcrowding or unsustainable use						
Other (specify)						

# > D.1.3 Interest in spatial distributions of cultural ecosystem services in the PA

•	•	
Would you be interested to get information on the spatial	YES 🗆	NO 🗆
distribution of cultural ecosystem services?		
If yes, for what purpose would you like to use these data?		

# > D.1.4 Number of visitors

Number of visitors last year	
Document(s) with information or contact(s) person(s):	

# > D.1.5 Available data on visitor counts

What kind of data are available on visitor counts for your PA?

	Please tick checkbox (multiple answers possible and provide links of contacts
Visitor count data/surveys	
Footpath loggers	
Visitor center or car park counts	
Website visitor numbers	
Guided tour participants	
Local hotel bookings	





Other:

> D.1.6 PA staff devoted to the attendance of visitors

Full time equivalent (FTE) of PA staff devoted to the attendance of visitors

#### D.1.7 Available trails for visitors

Number of kilometers of arranged and signposted footpaths/hiking trails		
Number of kilometers of canopy walk		
Are geo-data (maps, coordinates, shapefiles, etc.) available on this topic?	YES 🗆	NO 🗌

#### > D.1.8 Available observatories for visitors

Number of observatories / signposted viewpoints (for fauna or landscape observation)

#### > D.1.9 Available infrastructures for visitors

Tourism offices, information	Size			Construction	Last	Could you pro	ovide geodata
and other infrastructures for visitors: Specify type of	Small: 0 to 50m ²	Medium: 50 to 300m ²	Big: >300m ²	date if possible	renovation or exhibition renewal date	(maps, shapefiles) or of these infra:	coordinates, the location structures?
infrastructure	5011	50011			if possible		

#### > D.1.10 Satisfaction of visitors

Does the PA have a measure of visitor's satisfaction?	YES 🗆	NO 🗆
If yes, can you specify this visitor's satisfaction (please		
provide any reports)?		

#### > D.1.11 Communication with visitors, local community and other stakeholders

	Yes	No
Is there a responsive system for handling comments about the PA decisions?		
If yes, what system?		
If no, what would you suggest?		

#### > D.1.12 List of organisations linked to recreational activities in the PA

Clubs/associations/organisations linked to recreation activities in the PA:

# D.2 Landscape and monuments

Unusual/attractive landscapes features, patrimonial/	Comparative level of visit					
attractive monuments and places with historical value	None	Very small	Small	Moderate	High	Very high





# > D.3 Artistic work linked to the area

	Fame level	Number				
		[0; 30[	[30; 60[	[60; 90[	[90; 120[	> 120
Books in which the PA is	Famous internationally					
an important location /	Famous in the country					
has an important role	Famous in the region					
Paintings on the PA	Famous internationally					
landscape / seascape	Famous in the country					
	Famous in the region					
Movies taking place in	Famous internationally					
the landscape of the PA	Famous in the country					
	Famous in the region					
Handcraft or traditional	Famous internationally					
local products	Famous in the country					
	Famous in the region					

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Which are the most important to your opinion and why?

# D.4 Spiritual beliefs

What are the most important local values and beliefs?

# > D.5 Threats to socio-cultural values

Threats to socio-cultural values and elements	Importance of threat					
	Not present	Very small	Small	Moderate	High	Very high
Progression of urban development						
Progression of industry						
Conflict between different social groups						
Inappropriate use of cultural sites or buildings						
Over use / visitation pressure (tourism, recreation)						
Vandalism						
Fire						
Vegetation (encroachment)						
Erosion						
Weathering (wind and water)						
Pests (e.g. termites)						
Management limitations						
Others (specify):						

# > D.6 Social recognition for ecosystem functions and services delivered

# > D.6.1 Most important species and places in the PA for local residents and for tourists

What are the most important:	For local residents (what do they need, use and want to preserve the most)	For tourists (what do they want to see the most)
Species in the PA		





Places or landscapes of the PA

#### > D.6.2 Associations and NGOs involved in the PA uses and protection

Which locally active associations and NGOs are involved in the PA uses and protection?

#### > D.6.3 Public awareness

What is your opinion about: Importance						
	None	Very	Small	Moderate	High	Very high
		small				
Public respect on PA regulations and rules						
Local residents knowledge of natural history and						
environmental awareness						
Local residents awareness of PA's benefits						

# > D.7 Communication

#### > D.7.1 PA staff devoted to outreach

Full time equivalent (FTE) of PA staff devoted to communication / out	each
-----------------------------------------------------------------------	------

#### D.7.2 PA environmental education courses

Does the PA provide environmental education courses?	YES 🗆	NO 🗆
If yes, for what kind of public and how often?		

# > D.7.3 Species and places most valuated by the PA

In your opinion, what are the species and places that the PA values the most?

#### > D.7.4 PA corporate design

|--|

#### D.7.5 PA outreach elements

	Number
PA websites	
PA brochures produced or distributed	
PA informative panels	
Scientific publications linked to the PA	
PA books	
Other cultural products	
links/ contacts for the above:	





# > PART E: WHAT DOES YOUR PA NEED FROM ECOPOTENTIAL?

# E.1 Already requested products for your PA to ECOPOTENTIAL project

In the past, has your PA already requested products from the ECOPOTENTIAL project?

- NO 🗆
- YES 🗆
- IF YES:

We noted these products were requested for your PA:

Are some of the requests missing?	YES 🗆	NO 🗆
If yes, can you specify which ones?		
Did you start to receive some elements from the project?	YES 🗆	NO 🗆
If yes, can you specify which ones?		

# E.2 New requests and general interest for ECOPOTENTIAL products

Are you / your PA interested in products from ECOPOTENTIAL?

- NO 🗆
- YES 🗆
  - IF YES:

In what kind of data / products	In what form of data would your PA be interested?			
would your PA be interested?*	Products not requiring additional work Easy to Training a			
	(e.g. graphs, maps, precise results already	use tools	more complex	
	analysed, communication outcome)		techniques	

- * Examples:
- Specific products: maps, graphs, environmental or specific RS data...
- Communication products: booklet, information on the PA website...
- Specific models, Bayesian belief networks...
- Instructional video for some tools...

# E.3 Remote sensing products

Are you especially interested in remote sensing products, tools or techniques that are developed by ECOPOTENTIAL?

- NO 🗆
- YES 🗆

IF YES:

- 1. How would you foresee your PA generating new up-to-date products, using the ECOPOTENTIAL tools, once the project has finished?
  - $\circ$  ~ I would update the products using our own software/tools
  - o I would update the products online using ECOPOTENTIAL tools (software/data services).
  - o I would not require updated products
- 2. How often would you expect to update your own products?
  - o Every few months
  - o Every year
  - $\circ \quad \text{Every several years} \\$
  - o N/A





- 3. What type of products are of most value to your PA
  - Remote sensing products (e.g. land-cover maps)
  - Model outputs (e.g. Ecosystems services)
  - Both remote sensing and model outputs
- 4. Would you expect the ECOPOTENTIAL tools to be maintained (kept up-to-date with security patches and bug fixes)?
  - ∘ Yes □
  - No □
- 5. Would you expect online support when using this tool
  - o Yes □
  - No □
- 6. If ECOPOTENTIAL tools were accessible online, would you be willing to pay for access?
  - $\circ$  I would not expect to pay for this service because it should be free
  - $\circ$  ~ I would be willing to pay for access to a service by
    - pay per use (charged per product output)
    - subscription (monthly/annual charge)

# > E.4 Training on use of EO tools for PA management

ECOPOTENTIAL is organizing a 2 days hands-on workshop on Earth Observation tools, including a face-to-face training, in the first quarter of 2017, to train PA staff from PAs involved in the project. The programme will be aimed at the practical use of Remote Sensing and modelling software for PA management.

Would your PA like to send staff to this kind of training event?

- 1. NO 🗌
- 2. YES 🗆
  - IF YES:

Please indicate on what kind of	EO tools for PA	What is the level of proficiency of the participating staff?			ng staff?
management would you like to receive training:		Basic	Intermediate	Advanced	Unknown
Remote Sensing:					
Modeling					
In-situ data					
Other, please specify:					





# > PART F: INFORMATION ON CITIZEN SCIENCE IN THE PA

# F.1 Information of ongoing and planned Citizen Science in the PAs for integration across ECOPOTENTIAL

#### > F.1.1 Existing / planned citizen science projects

Are citizen science projects planned or already taking place or in your protected area?			
YES 🗆	PLANNED 🗆	NO 🗆	

#### IF YES / PLANNED :

Project title(s)

Website link or any other information

Please let us know the potential point(s) of contact (name, email, telephone number)

Are you planning to implement (an) additional Citizen Science programme(s) and how could we get in contact?

# F.1.2 Existing / planned smartphone apps

Do you plan to implement or already provide a smartphone app for your PA?			
YES 🗆	PLANNED	NO 🗆	

#### IF YES / PLANNED:

# > F.1.3 Environmental education programmes engaged with visitors and stakeholders

Do you offer environmental education programmes / material within your PA to engage with visitors/ stakeholders YES  $\Box~$  NO  $\Box~$ 

IF YES :

What kind of facilities / materials do you use in these	Do you include citizen science	Can ECOPOTENTIAL		
programmes [please tick checkbox]:	(volunteers) in the programmes	be of help		
	(yes or no)			
Visitor centres		□ Y □ N		
Guided tours		□ Y □ N		
Natural history groups		□ Y □ N		
Education programmes		□Y □N		
Educational online material/kits for individual use		□ Y □ N		
Website		□Y □N		
Other:		□ Y □ N		
Please let us know the potential point(s) of contact (name, email, telephone number)				





# > F.2 Characteristics of (potential, planned, or realized) Citizen Science programmes

# ➢ F.2.1 Motivations about citizen science

As a manager, what are your motivations for doing / planning / thinking about citizen science in your PA?

Motivation / purpose of applying citizen science	no	low	some	high	very high
	interest	interest	interest	interest	interest
Data collection					
Environmental education					
Outreach to visitors (learning/awareness raising)					
Outreach to visitors (fun/something to do)					
Involvement of local residents/stakeholders in					
conservation management processes					
Other:					

#### F.2.2 Possible topics of citizen science

What topics would you be interested in to assess by citizen science in your PA

Topic (tick which topic	cs you are interested in)
Species monitoring (sightings)	
Measuring environmental parameters (e.g. water pH, temperature, radiation, tree	
diameter at breast height, trophic level)	
Reporting of ecological problems / environmental degradation (e.g. erosion, invasive	
species, fire)	
Helping with image classification of earth observation data (e.g. air photos) or old maps	
Reporting visitor perception and values of protected area	
Measuring visitor usage patterns	
Reporting of practical issues (e.g. damages, need for management actions)	
Other (specify):	

#### > F.2.3 Contribution of citizens to the PA

Possible activities	How strongly do Citizens contribute?				
	not at all	Small	Moderate	Strong	Very strong
	0%	1-25%	26-50 %	51-80%	81-100%
Species monitoring (sightings)					
Measuring environmental parameters (e.g. water pH,					
trophic level)					
Reporting of ecological problems / environmental					
degradation (e.g. erosion, invasive species, fire)					
Helping with image classification of earth observation					
data (e.g. air photos) or old maps					
Reporting visitor perception and values of PA					
Measuring visitor usage patterns					
Reporting of practical issues (e.g. damages, need for					
management actions)					
Other (specify):					
>					

What other volunteering activities does your PA provide to citizens?

# F.2.4 Potential of data collection activities through Citizen Science

Rate potential of (possible) data collection activities through Citizen Science programmes for the work of your PA:

	Level of Potential of data collection activities			activities	
Possible activities	None	Low	Some	High	Very high
Data from (smartphone)sensors carried by participants (movement					
patterns of visitors, temperature – passive contribution)					
Data entries in smartphone app by the user (e.g. sightings,					
measurements, photo uploads – active contribution)					
Reporting on-paper protocols / maps					
Group activities together with citizens (e.g. mapping workshops,					
conducted projects)					
Citizen Science projects developed by citizens / groups					
Other activities					

# ➢ F.2.5 Available capacities for citizen science

What capacities do you have available/ or need to establish for citizen science programs in your PA?

# F.2.6 Usefulness of different technical application(s) of Citizen Science

Please rate the usefulness of different (potential) technical application(s) of Citizen Science for your PA

Technical application(s)	use-	little bit	quite	useful	very
	less	useful	useful		useful
Smartphone app					
Electronic devices for measurements/data logging (e.g. camera trap)					
Paper protocols / surveys / maps on paper					
Samples collected (material samples / photos)					
Other					
What are criteria making an application useful or useless?					

#### F.2.6 Results implementation

Where do you implement the results/findings from the citizen science programs?

# F.2.7 Target groups

What are your target groups for citizen science programs and why?

#### F.2.8 Challenges / barriers

What challenges or barriers do you face at your PA when implementing / planning a Citizen Science project?

Possible challenges	Degree of the challenge	none	little	some	high	very high
Budget constraints						
Lack of PA staff or other personnel to supervise						
Lack of interest of PA staff						
Participants engagement low due to difficult spatial structures						
in PA (not easy access etc.)						
Low interest of people to participate						
Other						





# 7. Annex II: Questionnaire on the aesthetic value of the landscape



Project Title ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS (Har HaNegev Landscape Preference Survey)

#### Purpose of study

This research is a part of a large multi-national, collaborative, EU-funded project to study how to improve the utilization of earth observation (e.g. satellite) data for pressing global and regional environmental challenges. The Israeli research team is working in the Negev Highlands Protected Area, providing a drylands ecosystem component for the research consortium. Within the Israeli research team, we are assessing the most important ecosystem services (benefits humans derive from nature) for local stakeholders.

The Negev, the southern arid part of Israel, is the largest land resource of the country, and government policy encourages redirecting growth to this region. Therefore, residential development is predicted to expand to this area; it is crucial to understand the effect of such settlement on the provision of ecosystem services. One of the most important such services of dryland ecosystems is landscape beauty. Whereas drylands are characterized as lacking in green infrastructure (i.e. vegetation) that provide the vast array of ecosystem services in more mesic environments, their geological and combined geological-biological landscapes are highly valued for the cultural, aesthetic, recreational and spiritual values. The rapid development of the region, currently and in the future, may profoundly impact these cultural services and the value of the visual landscape.

At the behest of our colleagues in the Israel Nature and Parks Authority, who have designated the aesthetic landscape as one of the most important ecosystem services of the region, we will research the impact of human development in the region on the aesthetic value of its landscapes. Through querying a variety of stakeholders, including local residents and tourists, we will define their perceptions and landscape preferences, and analyze them as a function of demographic variables and in relation to the strength of their "nature" identity (e.g. how much they identify with nature as part of their character). In this way, we aim to understand 1) which landscapes are most valued; 2) how various human objects influence landscape preferences; 3) how preferences are related to demographic variables, and; 4) how preferences are related to nature identity.

#### Research plan and tools. What will the research subjects have to do?

We have prepared a short questionnaire that queries respondents regarding their preferences to 16 different landscape scenes from the Negev Highlands. Additional





questions refer to opinions about nature and the respondents relationship with nature. Finally, there is a battery of demographic questions about the respondent. The questionnaires have been prepared in English, Hebrew and Arabic. Respondents will be able to choose which questionnaire suits them.

We will be circulating the questionnaire in public areas of the major communities (Midreshet Sede Boker, Mitzpe Ramon), tourist sites (Avdat, Machtesh Ramon Visitors Center), and through personal contact with local (Jewish, Bedouin and other) respondents. We will be hiring two local surveyors from Midreshet Sede Boker and a Bedouin village, who will undergo training and a practice session with the primary investigator, who will then use personal contacts within local communities to query local residents. All participation in the research is voluntary and anonymous, and this will be relayed orally and in written form to each potential respondent. Nature and Parks Authority rangers will also be distributing questionnaires in their visitors' centers in the region. They will undergo the same training as our field assistants.

Our goal is to collect 400 completed surveys – approximately half from local residents and half from tourists.

# Explain how you are going to recruit your subjects. Will participants receive compensation? If so what sort of compensation?

We will be approaching subjects in two ways. First, we will be requesting participation in public areas around the region, including shopping areas and tourist sites. Potential respondents will be asked if they could participate in the survey and be informed regarding the objectives of the research. Second, we will be approaching residents personally through local field assistants. This latter group includes residents of the Bedouin villages and the single-family farms.

We are not offering compensation. All participation is purely voluntary and this will be explicitly expressed both orally and in writing. The survey takes approximately 15 minutes to complete.

#### Dangers and benefits for research subjects.

We do not foresee any dangers for participants. The benefits are the potential application of the results to avoid development that degrades the value of the aesthetic landscape, and to identify and mitigate existing aesthetic nuisances. Alternatively, the information may be used for encouraging particular development that is deemed to accentuate the quality of the landscape aesthetics.

#### The way confidentiality and anonymity of subjects will be secured.

We do not ask for any personal information other than demographic data (gender, age, education, income). There will be no identifying information on the questionnaires and after completion the surveys are numbered and entered into the database anonymously. Further, the respondents are not required to fill in details that they are



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uncomfortable filling in (for instance our past response rates for the question of "income" have been slightly lower than the general response rate).

*How will you inform the participants that their participation is voluntary and that they can withdraw at any time with no negative consequences for them.* 

We will inform participants that their participation is voluntary, that they can withdraw from the research and that there is no compensation during our initial approach. Further, it is written on the first page of the questionnaire. Our contact information is also provided, should the respondent want to speak with us.

Include the Appendix with the research tools to be used (Surveys, interview questions/protocol, and/or protocol to record observations)









# Har HaNegev Landscape

# Survey of Landscape Preferences



Thank you for your willingness to participate in the survey.

Our research team from The Center for Urban and Regional Studies at the Technion seeks to develop tools to help promote the well-being of the Negev Highlands region and its residents and visitors. By participating in this survey, you will help us understand the preferences of different audiences for the Negev landscapes.

The survey will take approximately 15 minutes.

Please note that participation is voluntary. All your answers will remain anonymous and the survey results will not be used for any purpose other than research activities indicated here. You are entitled to stop participating at any time and there will be no repercussions.

For any questions you may have regarding the survey and the associated research, please inform the person who gave you the survey or contact Dr. Idan Porat (<u>idanpo@technion.ac.il</u>).

After completing the survey please return it to the researcher who gave it to you.

Your opinion is important to us!

THANK YOU • Спасибо • شكرا لك • ТНАНК YOU





1. Please ra	ank the imag	es accordin	g to how much	you enjoy/like	the scene:
	8		٢		0
Image #	Strongly dislike	Dislike	Neutral	Like	Love
1	1	2	3	4	5
2	1	2	3	4	5
3	1	2	3	4	5
4	1	2	3	4	5
5	1	2	3	4	5
6	1	2	3	4	5
7	1	2	3	4	5
8	1	2	3	4	5
9	1	2	3	4	5
10	1	2	3	4	5
11	1	2	3	4	5
12	1	2	3	4	5
13	1	2	3	4	5
14	1	2	3	4	5
15	1	2	3	4	5
16	1	2	3	4	5

#### Har HaNegev landscape preference survey

2. Select 3 pictures showing views that you would most like to see in the Negev Highlands, and explain why you chose them:

Image #	Explanation (why do you prefer this scene?)



3. Select 3 pictures showing views that you would **least like** to see in the Negev Highlands, and explain why you chose them:

Image #	Explanation (why do you not prefer this scene?)

People around the world are generally concerned about environmental problems because of the consequences that result from harming nature. However, people differ in the consequences that concern them the most. Please rate the following items from 1 (not important) to 7 (supreme importance) in response to the question:

I am concerned about environmental problems because of the consequences for ______ ...

Statement	Not important at all						Very important
Animals	1	2	3	4	5	6	7
Plants	1	2	3	4	5	6	7
Marine life	1	2	3	4	5	6	7
Birds	1	2	3	4	5	6	7
Me	1	2	3	4	5	6	7
My future	1	2	3	4	5	6	7
My lifestyle	1	2	3	4	5	6	7
My health	1	2	3	4	5	6	7
All people	1	2	3	4	5	6	7
Children	1	2	3	4	5	6	7
People in my community	1	2	3	4	5	6	7
My children	1	2	3	4	5	6	7



# 5. Instructions: For each of the following, please rate the extent to which you agree with each statement, using the scale from 1 to 5 as shown below. Please respond as you really feel, rather than how you think "most people" feel.

Statement	Strongly disagree	Disagree a little	Neither Agree or disagree	Agree a little	Strongly agree
I enjoy being outdoors, even in unpleasant weather.	1	2	3	4	5
Some species are just meant to die out or become extinct.	1	2	3	4	5
Humans have the right to use natural resources any way we want.	1	2	3	4	5
My ideal vacation spot would be a remote, wilderness area.	1	2	3	4	5
I always think about how my actions affect the environment.	1	2	3	4	5
I enjoy digging in the earth and getting dirt on my hands.	1	2	3	4	5
My connection to nature and the environment is a part of my spirituality.	1	2	3	4	5
l am very aware of environmental issues.	1	2	3	4	5
I take notice of wildlife wherever I am.	1	2	3	4	5
I don't often go out in nature.	1	2	3	4	5
Nothing I do will change problems in other places on the planet.	1	2	3	4	5
I am not separate from nature, but a part of nature.	1	2	3	4	5
The thought of being deep in the woods, away from civilization, is frightening.	1	2	3	4	5
My feelings about nature do not affect how I live my life.	1	2	3	4	5
Animals, birds and plants should have fewer rights than humans.	1	2	3	4	5
Even in the middle of the city, I notice nature around me.	1	2	3	4	5
My relationship to nature is an important part of who I am.	1	2	3	4	5
Conservation is unnecessary because nature is strong enough to recover from any human impact.	1	2	3	4	5
The state of non-human species is an indicator of the future for humans.	1	2	3	4	5
I think a lot about the suffering of animals.	1	2	3	4	5
I feel very connected to all living things and the earth.	1	2	3	4	5



#### 6. Personal data

Gender:	Male	/ Female

Year of birth: _____

Marital status (circle one): Married Single Divorced Widowed

Place of residence

For the following three questions, please specify where did you spend **most** of your childhood (age 4 - 17)?

- a. Country: _____
- b. Type of community (circle one):

Big city / Medium or small town / Community village / Village, kibbutz or moshav

c. Region (circle one): North of Israel / Center of Israel / South of Israel / Abroad

Where were your parents born?

- a. Parent 1: _____
- b. Parent 2: _____

What is your education? (circle one):

High school / Undergraduate degree / Advanced degree

Why are you in the Har HaNegev area today? (circle one)

Recreational visit / Work visit / I live here

How often do you come to the area? (circle one)

I live and/or work here / I visit often / I visit rarely / This is my first visit

# Thank you very much for your cooperation!

For research staff: Id _____date ____location _____





#### 8. Annex III: Informed Consent Form

Title of Research: ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM

BENEFITS THROUGH EARTH OBSERVATIONS (Har HaNegev Landscape Preference Survey)

Principle Investigators: Dr. Idan Porat, Dr. Daniel Orenstein, Center for Urban and Regional Studies, Faculty of Architecture and Town Planning, Techion

Dear Participant,

Our research team from The Center for Urban and Regional Studies at the Technion seeks to develop tools to plan and manage Negev landscapes for the well-being of the region's residents and visitors.

We ask you to look at a series of pictures and rank them according to how much you like or dislike the scene. We then ask you to explain in a few words why you like or dislike particular pictures. Finally, we ask you several questions to help define your perspectives on nature and natural areas. By participating in this survey, you will help us understand the preferences of different audiences for the various Negev landscapes.

The survey should take approximately 15 minutes.

Participation in the survey is **completely voluntary** and we are not offering any compensation. We can assure, however, that your answers and comments are important and that results will be shared with our partners in local land management agencies and will help inform development decision making. If you decide not to take part or to skip some of the questions, you are welcome to do so. If you decide to take part, you are free to withdraw at any time.

Your answers will be **anonymous** and **confidential**. The individual records of this study will be kept private and there will be no identifying features connected to your answers.

If you have questions, please contact Dr. Idan Porat (idanpo@technion.ac.il)

# Your opinion is important to us!

I have read the above information, and have received answers to any questions I asked. I consent to take part in the study.

Name: ______ Signature: _____

Date:





#### Declaration

#### The Technion - Israel Institute of Technology

**Title of Research Project:** ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS (Har HaNegev Landscape Preference Survey)

Date: 12/7/16

To: Executive Vice President for Research

From: Assistant Professor Daniel Orenstein

Re: Declaration as Required by the "Regulations Concerning Ethical Rules of Conducting Research Studies in Behavioral Sciences on Humans" *

I hereby declare I have read the "Regulations Concerning Ethical Rules of Conducting Research Studies in Behavioral Sciences on Humans" and shall abide by it.

Please check:

X To my knowledge, nothing in the proposed study would cause harm to the subject(s) and their environment (as defined by the Regulations).

□ In my opinion, the risk to the humans in the proposed study is low and the necessary steps were taken to protect the subject(s).

□ In my opinion, there are risks of harm to humans in the proposed study. I hereby request that the Ethics Committee examine the details of my proposal and express its opinion regarding the study's terms of qualification and regarding the steps necessary for reducing or eliminating the risks.

Signature of the Researcher

.....

* A researcher whose research touches upon the aforesaid in the Regulations, shall attach this declaration to the "Research Proposal Registration Form" (VP Research Form).

