

## Appendix A – Indicators and Methods Used to Analyze Different Components of the Adaptive Capacity Framework (I=Interview, S=Survey, KI=Key Informant, SD=Secondary Documents)<sup>1,2</sup>

Category	Component	Indicator	Method <sup>2</sup>
Flexibility and Diversity	Occupational mobility Attachment to occupation	Level of occupational diversity throughout the year	S, I, KI
		Number of employment changes in last 10 years	S
		Response to hypothetical change in primary livelihood – What would you do if unable to make a living?	S
		Livelihood narratives and values	I
	Occupational multiplicity Livelihood and income diversity	Number of different types of marine resource utilized for income purposes	S
		Number of different gear types utilized	S
		Number of different livelihoods in a household.	S
		Diversity of livelihood opportunities throughout the year (seasonality)	KI
		Diversity of livelihood opportunities available to men versus women	S, I
		Average income in rainy versus dry season	S
		Average income in rainy versus dry season (by Gender)	S
	Dependence on natural resources (fisheries)	Percentage of primary livelihoods in community that are fisheries related	S, I
		Relative importance of fisheries as a secondary livelihood	S
		Relative importance of subsistence marine livelihood activities (# of items used)	S
		Contribution (%) of fisheries livelihoods to household income	S
		Number of nights a week that house eats seafood (food security)	S
		Relative importance of tourism to community and of natural resources to tourism	I
	Perception of risk	Perception of how much of a risk climate change poses to the community or to livelihoods (1-5 ordinal ranking)	I, S
		Ranking the order of a number of different changes in terms of risks to community – How much impact do change events have on your household or livelihoods (1-5 ordinal ranking)	S
	Place attachment	Willingness to re-locate for livelihood purposes	S
Length of time living in the area		S	
Origin of interviewee		S	
Family members living away from area		S	
Capacity to Organize	Bonding social capital and networks	Level of participation in community organizations	S, I
		Level of support from family and friends (inside and outside community)	S
		Ranking and rating of importance of community organizations	S
		Local hiring practices	I
		Relationships with local middlemen in the community (benevolence)	I
		History of collective action	I
	Gender relations	Proportion of women in leadership roles	I
		Women have equal access to and control over critical livelihood resources	S
	Participation in community, regional, and protected area decision making	How are people involved with community organizations? – number ways and nature of involvement	S
		How involved people are in community decision making (ordinal score ranking 1-5)	S
		How involved people are in regional decision making (ordinal score ranking 1-5)	S
		How involved are people in the community in protected area management (ordinal score ranking 1-5)	S, I
		How involved are people in management of natural resources in the area? (ordinal score ranking 1-5)	S
		DNP policies for participation and presence of active programs of outreach and engagement to communities and groups	I, SD

<sup>1</sup> Citation: Bennett, N.J., Dearden, P., Murray, G. and Kadfak, A. 2014. The capacity to adapt?: Communities in a changing climate, environment and economy on the northern Andaman Coast of Thailand. *Ecology & Society*. Online.

<sup>2</sup> Corresponding research instruments can be found in Bennett, N. J. 2013. The capacity to adapt, conserve and thrive?: marine protected area communities and social-ecological change in coastal Thailand. University of Victoria, Victoria, BC. [online] URL: <https://dspace.library.uvic.ca:8443/handle/1828/4728>

Category	Component	Indicator	Method <sup>2</sup>	
	Local environmental institutions and social norms	Qualitative exploration of rules, practices, and norms that the community uses to conserve natural resources (e.g., habitats protected, 5 types of restrictions, qualitative exploration of rules and regs)	KI, I, S	
		Presence of conservation ethic – qualitative judgement	I	
		Qualitative exploration of relative community knowledge of the rules and norms	I, KI	
		Qualitative exploration of how and whether regulations are enforced	I, KI	
		Community trust and perceptions of justness and fairness in resource allocation	S, I	
	Environmental policies and agencies	Knowledge of national park – existence, names, rules and regulations, purpose	S, I	
		Perceptions of national park management and governance	S, I	
		Following of rules created by the DNP	I	
		Perceptions of fisheries management and agencies	I	
		Following of rules created by fisheries	I	
		Perceptions of DMCR management and agencies	I	
		Enforcement of rules and regulations	I	
		Cooperation and trust between various government agencies – fisheries department, national parks department, DMCR, marine police, etc	I, SD	
		Legislation to support local management	I, SD	
		Harmonization of policies with actions at various scales	I, SD	
	Governance and leadership	Perceptions of local leaderships role in overcoming problems	S	
		Qualitative descriptions of the community leadership and governance processes	I, KI	
		Perceptions of local leadership and governance	I, S	
	Levels of corruption	Perceptions of level of corruption in community, protected area and regional governments	I, SD	
		Ranking of impact of corruption as change event on household livelihoods	S	
		National corruption index	SD	
	Active risk management	Are people managing risk by planning for and investing in the future (Do people have reserves of food, savings, or protect assets from hazards?)	KI, S	
		How community plans for adaptation and plans for risks	KI, I	
Migration	Whether born in the community or region	S		
	Number of years living in the community (-AC)	S		
	Children living and working away from the community (+AC)	S		
Learning and Knowledge	Resource monitoring, feedback, and adaptation mechanisms	Qualitative exploration of rules, practices, and norms that the community uses to conserve natural resources	I, KI	
		Exploration of how rules have changed in the past in response to perceived environmental changes (flexibility)	I, KI	
		Qualitative exploration of engagement with knowledge from past change events into current thinking and practice	I, KI	
		Presence or absence of adaptive management in MPA management	I, SD	
	Knowledge and experience of climate change	Experience of climate change related changes (e.g., storms, etc...)	I, PV, S	
		Understanding and knowledge of the present and potential future impacts of climate change	S	
		Number of sources of climate change information	S	
		Regional-community extension workers and government understand climate risks	I	
		Access to climate change information at regional and local level	I, S	
	Spaces for learning	Presence of active programs of outreach, education, and engagement with communities	S, KI	
		Qualitative discussion of formal and informal spaces for anticipatory learning and action	I, KI	
		Involvement of communities in NRM – national parks and fisheries	S, I	
	Diversity of knowledges for NRM	Level of incorporation of diverse knowledges in NRM and conservation	I, SD	
		Presence and strength of traditional knowledge	I, SD	
		Past or active programs of documentation of Traditional Knowledge	I, SD	
	Capacity to anticipate change and develop response strategies	Identification of factors that cause change to number of fish in the sea	S, I	
		Identification of actions that could help to conserve resources or increase the number of fish in the sea	S, I	
	Recognition of causality and human agency	Naming of factors that cause declines in marine resources.	S, I	
		Naming of human factors that cause declines in marine resources	S, I	
		Naming of interventions for conserving resources	S, I	
	Access to Assets	Material assets	Household construction materials	S
			Proximity of house to beach	S

Category	Component	Indicator	Method <sup>2</sup>
		Number and quality of household appliances	S
		Number of boats	S
		Number of land vehicles	S
		Diversity of fishing gears	S
		Ownership of house and land for house	S
		Ownership of land and number of rai – suitability of land	S
	Infrastructure	Presence of 20 infrastructure items in community	KI
		Presence of infrastructure for disaster prevention	I
		Presence of tourism related infrastructures	I, KI
	Levels of education	Levels of formal education	S
		Family members attending school away from the area	S
	Financial status and access to sources of credit	Relative income-poverty level	S
		Perception of income versus household expenses	S
		Qualitative exploration of economic costs - household and livelihood	I
		Balance of debt to income	S
		Presence or absence of financial savings	S
		Balance of debt to savings	S
		Access to sources of credit – number of items	S
		Remittances from family members – amount, remittance to household income ratio	S
		Comprehensive wealth ranking	S
		Number of laborers	S
		Number of dependents in the household	S
	Bridging social capital	Partnerships with outside academic organizations or NGOs on local development projects	KI
		Levels of participation in organizations from outside the community	S
		Relative importance of organizations from outside the community in overcoming challenges	S
		Qualitative explorations of conflict between communities and groups	I
		Presence of social and economic “safety nets” in case of disaster	I, KI
	Institutional support	Presence of local and regional institutions that are involved in facilitating adaptation	I, SD
		Government organizations with mandates to incorporate climate change considerations	I, SD
		Presence of policies, programs, and plans for climate change adaptation	SD
		Involvement of civil society in planning and implementation of CC adaptation	I, SD
		Financial support for adaptation programs for building AC (community and industry)	I, SD
	Natural capital	Relative diversity of natural resource base and habitats (utilized)	I, S
		Health of the marine ecosystem - fish in the sea	S, I
		Suitability of the site for tourism	KI
		Access to and control over critical livelihood resources (rules, perceptions, actual?)	I, S
	Equity and rights	Perceptions of equity in access to resources	S
		Equity in sharing of benefits from livelihoods	S
		Equitable distribution of wealth among various groups	S
		Participation of most vulnerable in planning processes	I, S
Perceptions of equity for women in access to resources		S	
Thai ID numbers and the rights associated with these		I	
Comprehensive equity ranking		S	
Relative equity in wealth within the community (comprehensive ranking)		S	