Socio Economic Monitoring in Protected Areas

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Eberswalde

HNEE

Why economic monitoring of PA?

- Protected areas perform important **services for humanity**: protection of biodiversity, landscape, recreational opportunities, CO2 storage, water and air purification, etc.
- **Non-use** is becoming an increasingly important land use category
- However, protected areas are often **underfunded**, are under economic pressure to use them, and have acceptance problems
- Reasons (among others): **economic benefits** of protected areas are often **not known** or are controversial
- **Protected areas are seen as** economic losses
- Challenge: many of the **benefits of protected areas** have characteristics of **public goods** for which there are no market prices

European Charter for Sustainable Tourism in Protected Areas

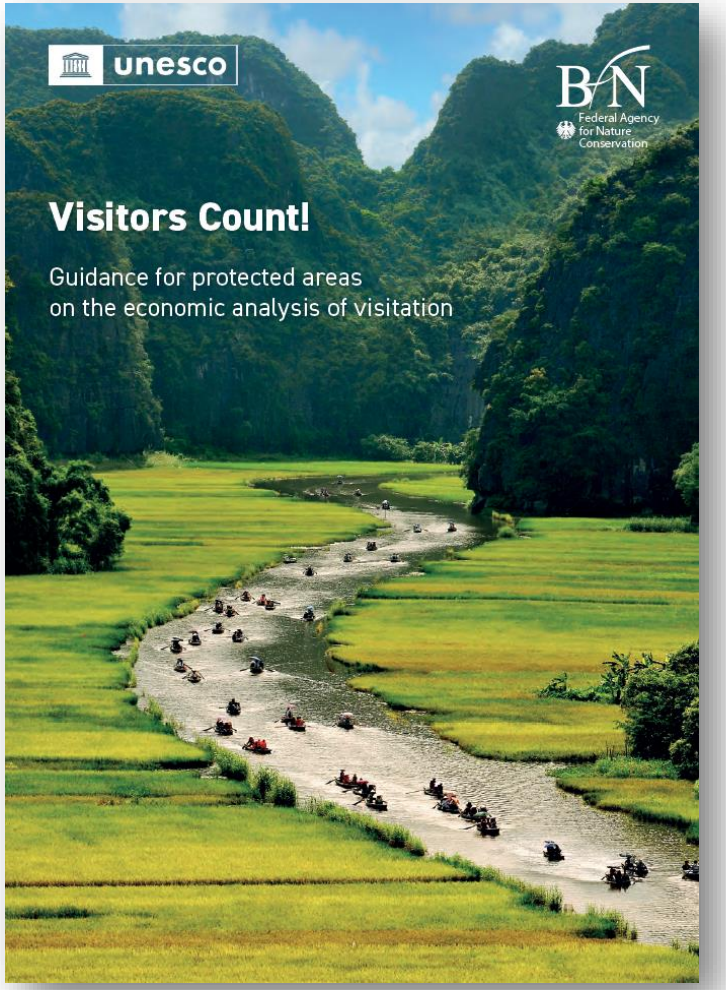

Paul F. J. Eagles

*"**Any phenomenon that is not measured and reported does not exist politically.** Governments, societies, communities and individuals place more value on that which is documented.*

*All management is dependent upon information. The better the quality of information; the better the opportunity for good management. **Information about the visitors and their activities enables managers to deal with the challenge of changing volumes of tourism**."* *Canadian biologist Prof. Eagles*

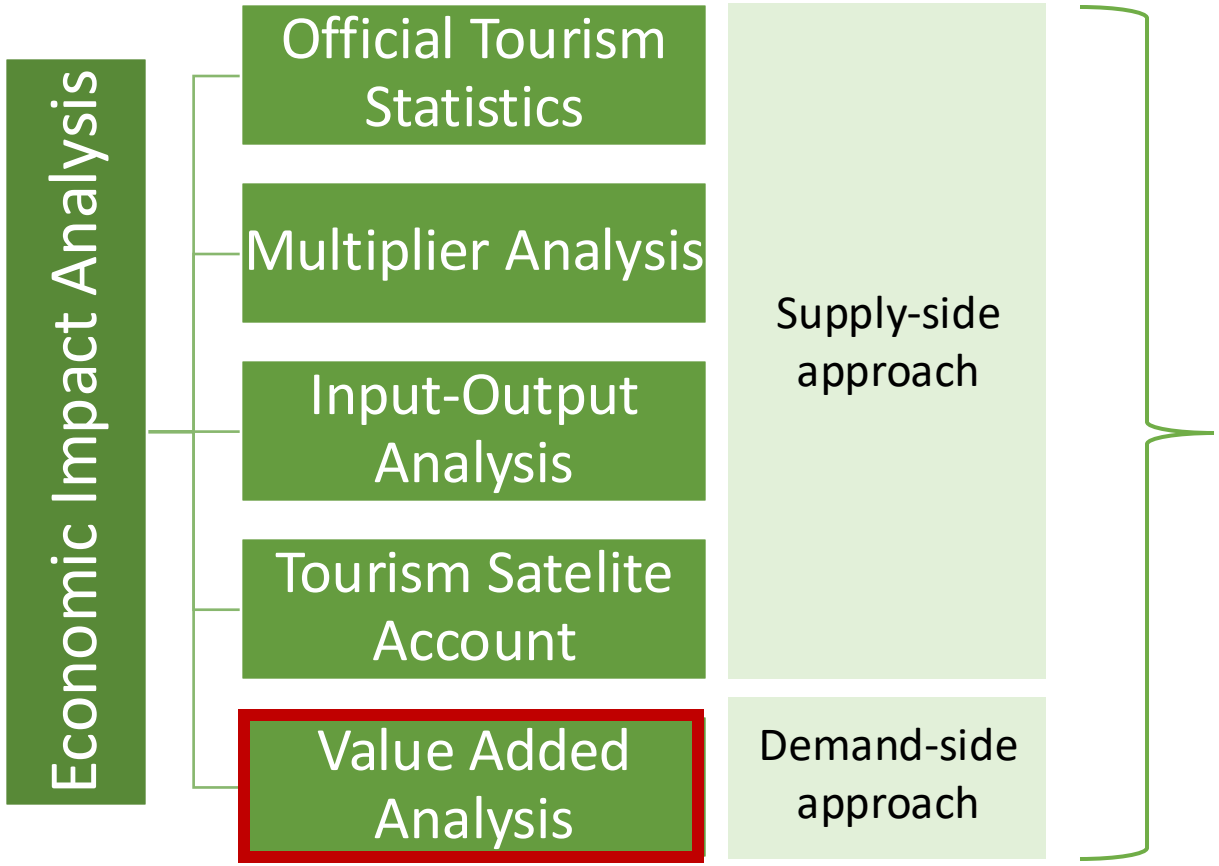
Estimating economic effects of PA in Germany

- Until the beginning of the 2000s: **only estimates** of visitor numbers to national parks in Germany
- 2002/03: Pilot study Berchtesgaden National Park
- 2006: Publication of **a guide to determining the economic effects** of tourism in protected areas
- Since then: **studies on all national parks**, some of them repeated, **all biosphere reserves**, a couple of the 104 nature parks
- 2021: International guide on economic analysis of visitation in PA
- *but*: there's still **no national monitoring program**



sources: JOB et al. 2003, 2005, 2006, 2008, 2009, 2013, 2016; SPENCELEY ET AL. 2021

Estimating economic effects of PA



1. Number of visitors / visitor days
2. Differentiation of visitor types
3. Tourism expenditures
4. Secondary data about regional economics

Source: Woltering 2012

Estimating economic effects of PA

Tangible effects

- Direct economic effects
- Indirect economic effects
- Induced economic effects

Estimating economic effects of PA

“A family arrives at a protected area”

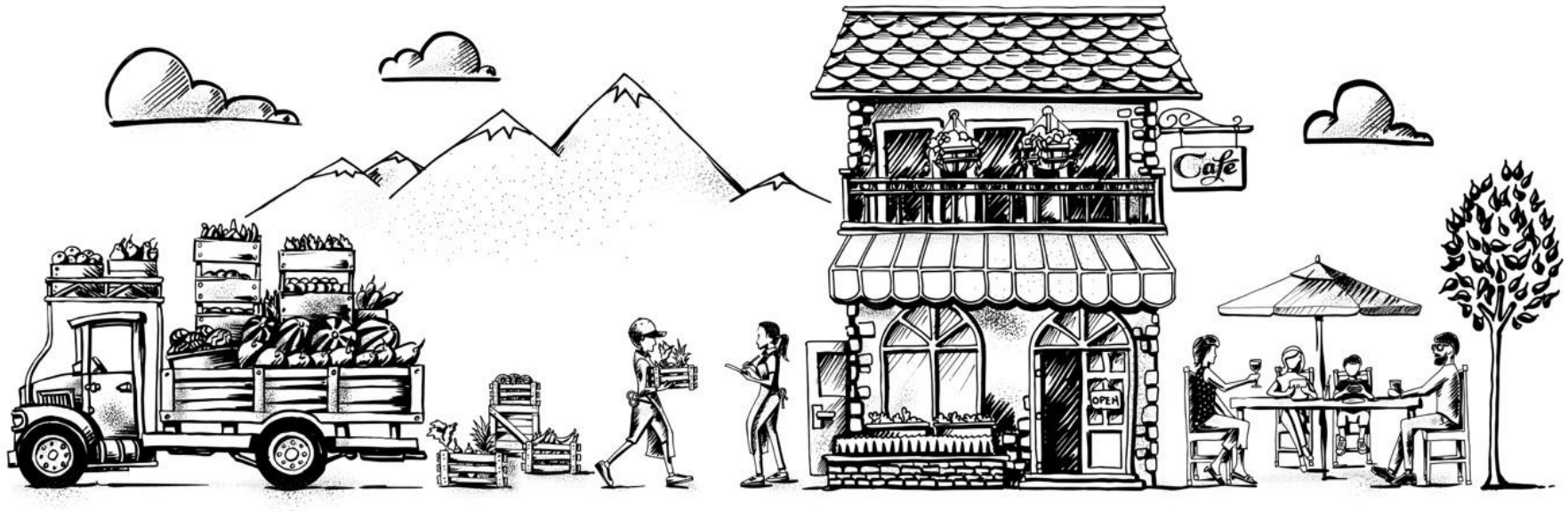
source: Spenceley et al., 2021

Estimating economic effects of PA

Direct effect:
“The family spends money in and aournd the protected area”

source: Spenceley et al., 2021

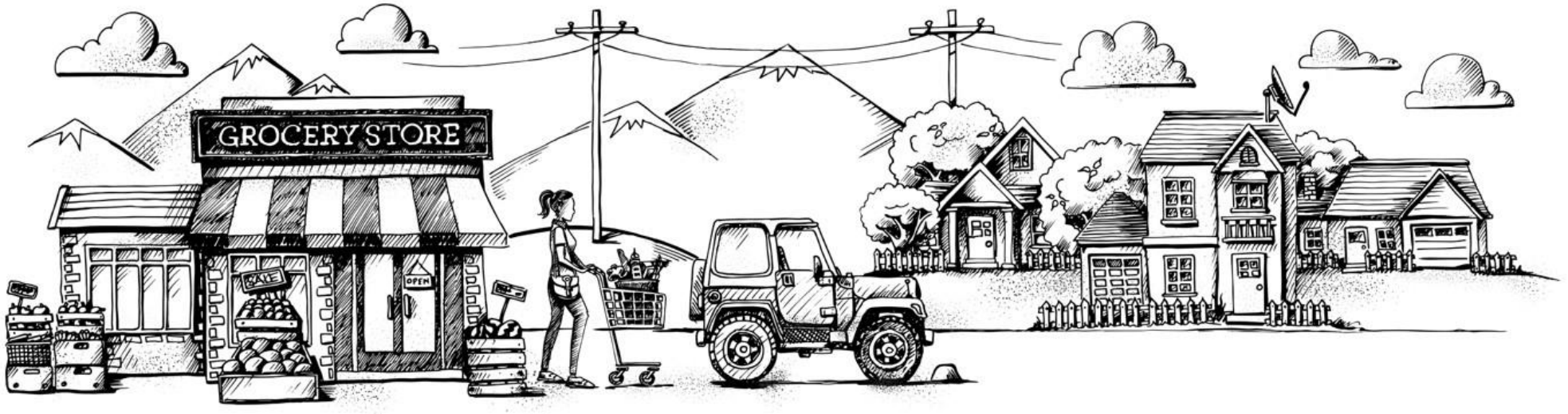
Estimating economic effects of PA



Indirect effect:
“The restaurant buys fruits & vegetables from local farmers to produce food.” The spending is the indirect effect on the local economy.

source: Spenceley et al., 2021

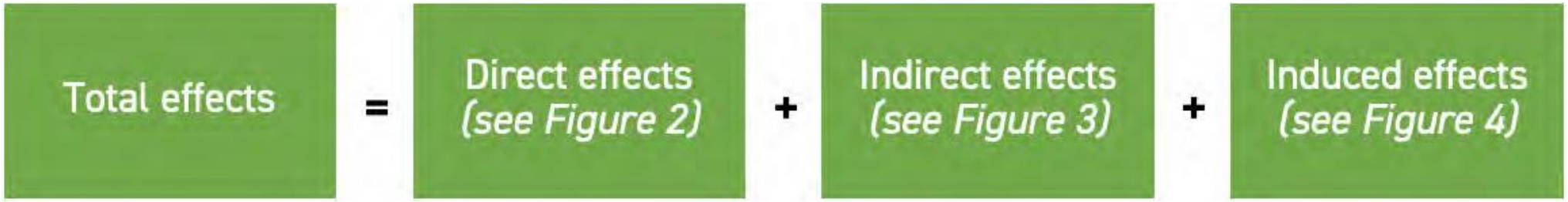
Estimating economic effects of PA



Induced effect:
“The employees of the restaurant use their income to buy groceries for their dinner.” This spending generates induced effects on the local economy.

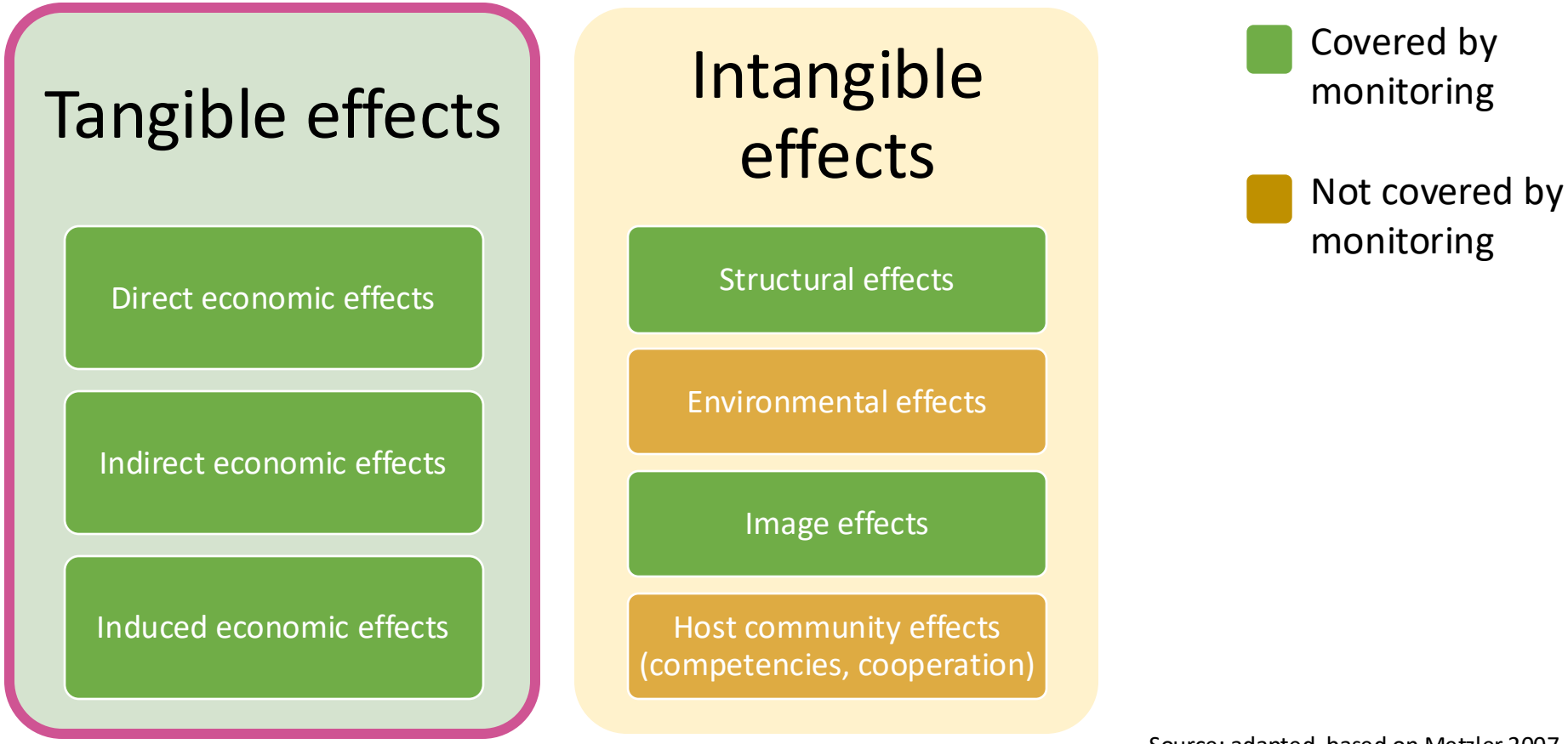
source: Spenceley et al., 2021

Estimating economic effects of PA



source: Spenceley et al., 2021

Estimating economic effects of PA



Source: adapted, based on Metzler 2007

Estimating Economic Effects of Tourism

Established method for estimating economic effects:

- overall from visitation
- Specific because of the existence of the protected area

Method is known as
Socio-Economic Monitoring

Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure

No. of day trippers	No. of overnight tourists

Several characteristics need to be regarded:

- Visitor types
- Area-wide coverage
- Year-round estimates
- Seasonal patterns
- Weather patterns

Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure

How to estimate the visitor numbers?

Socio-Economic Monitoring of PA

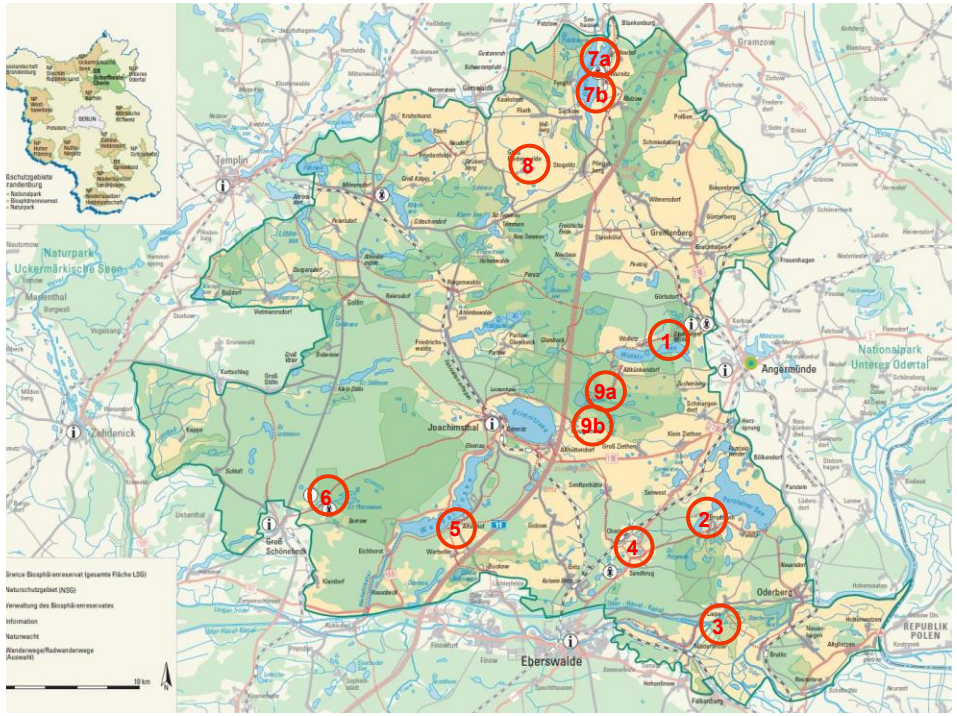
Example BR Schorfheide-Chorin

When: July 20 - Aug 21; 18 days

Where: 10 locations in the BR

How & Who: 3 survey types for visitors

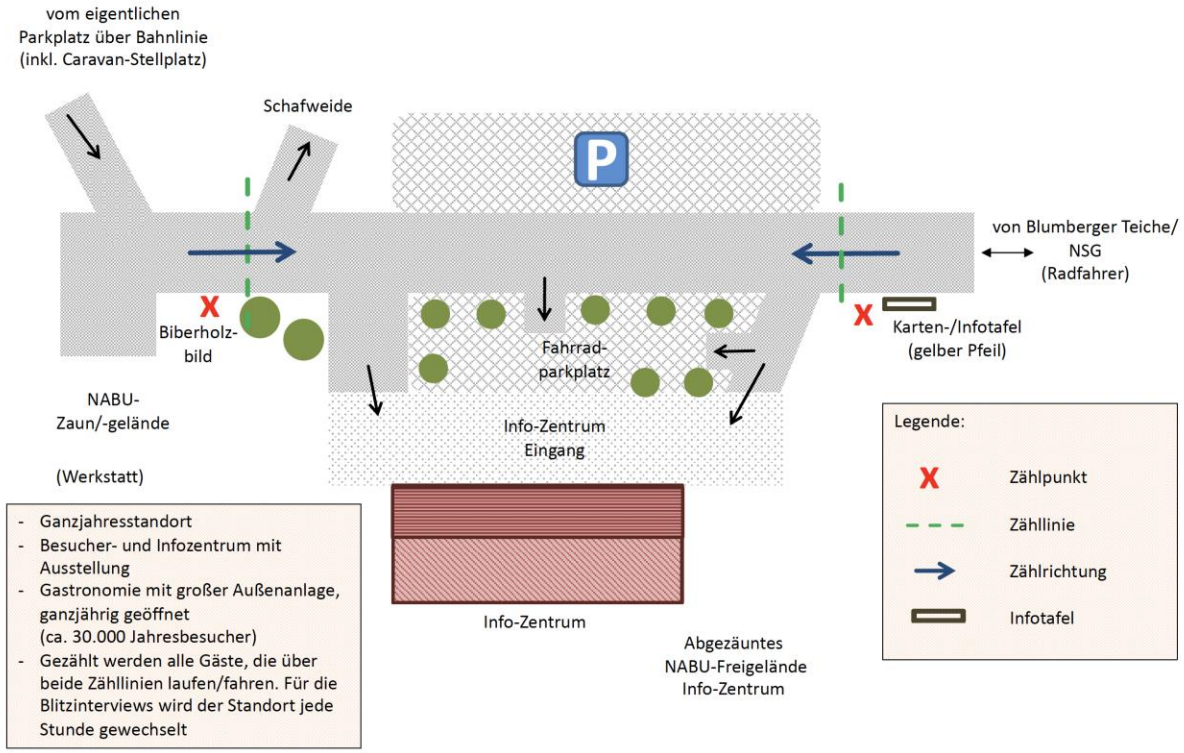
What: Economic effects of tourism



Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure

Example Biosphere Reserve Schorfheide-Chorin



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Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure

Example Biosphere Reserve Schorfheide-Chorin

Division of the counting period into three seasonal sections

1. Low season A und Low season B
2. Winter season
3. Sommer season

Division into weekdays and weekend days

1. Week day (WT): Monday to Friday
2. weekend (WE): Saturday, Sunday and public holidays

Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure

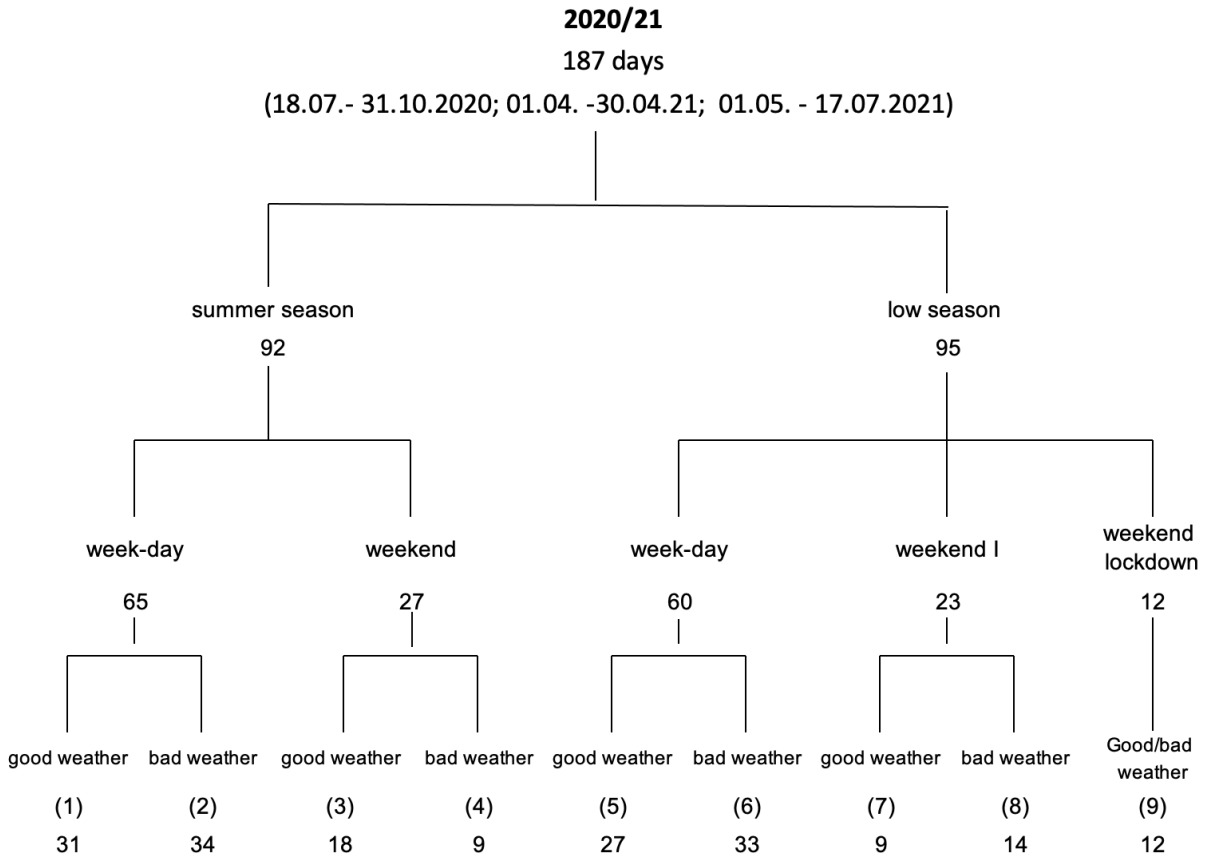
Weather as an influence factor

criteria: Temperature, precipitation, sunshine duration

- Using weather data and normalisation of these factors (via z-transformation)
- Determining the number of "good" weekdays per season, "good" weekend days etc.
- Weighting of the count data using this number

Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure



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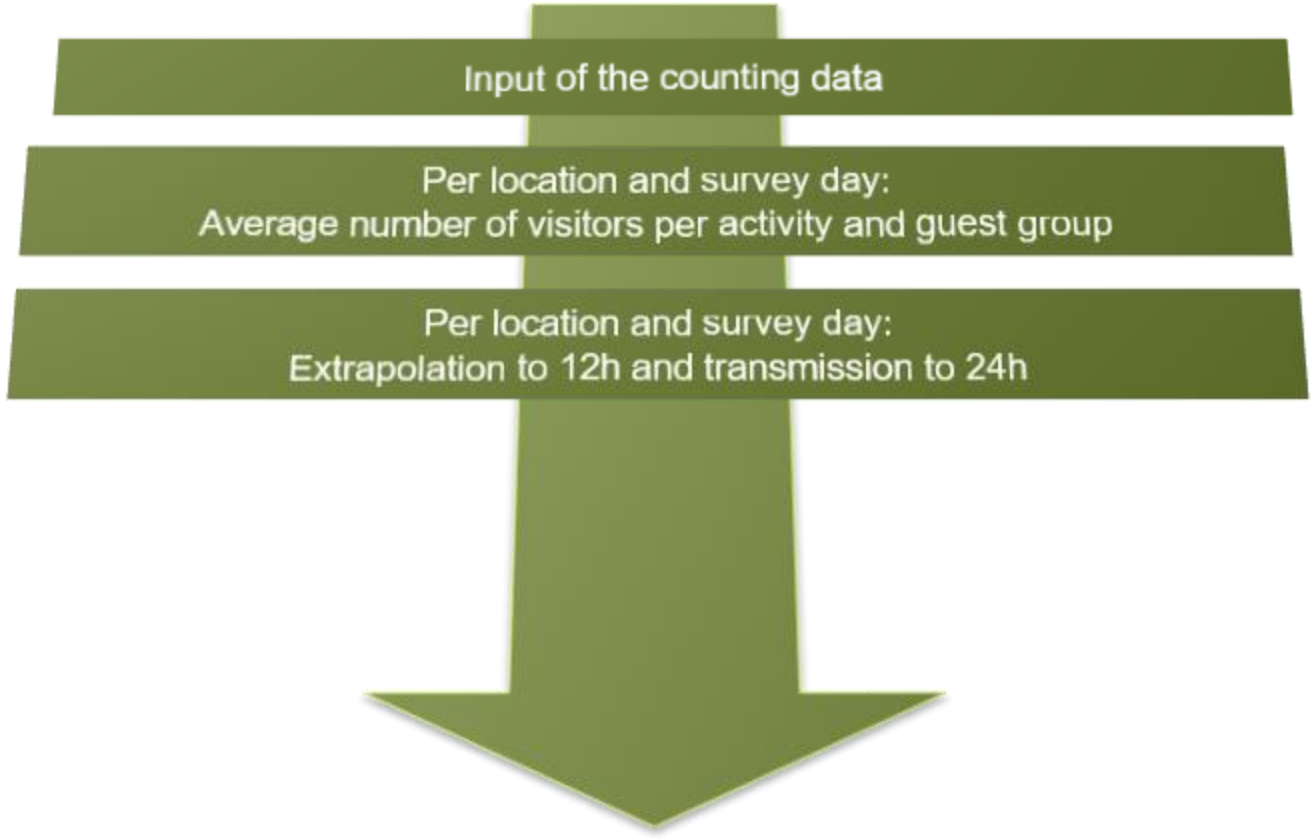
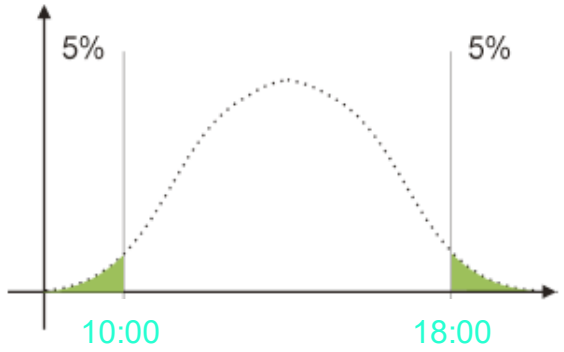


Socio-Economic Monitoring of PA

- Extrapolation of the number of visitors to the core time 7am – 7pm
  (x = number of missing hours = 4)



$$\sum_{Kernzeit} = \sum_{Zählzeit} + \left(\sum_{Zählzeit} \left(\frac{x}{12} 0{,}1 \right) \right)$$

- extrapolation to 24h depending on season : $\sum_{24\,h} = \left(\sum_{Kernzeit} \right) y$
  - 5% in the low season
  - 2.5% in the winter season
  - 7.5% in the summer season

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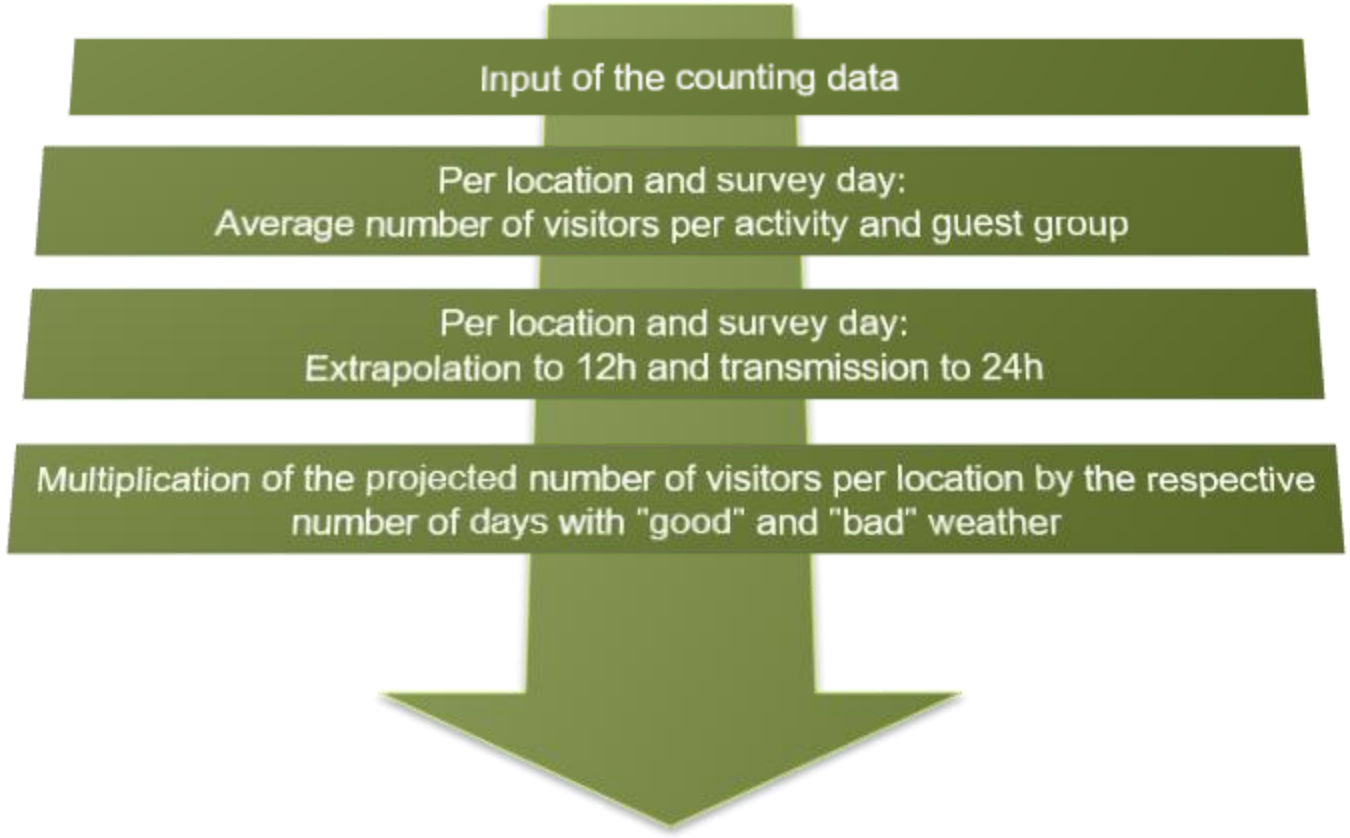
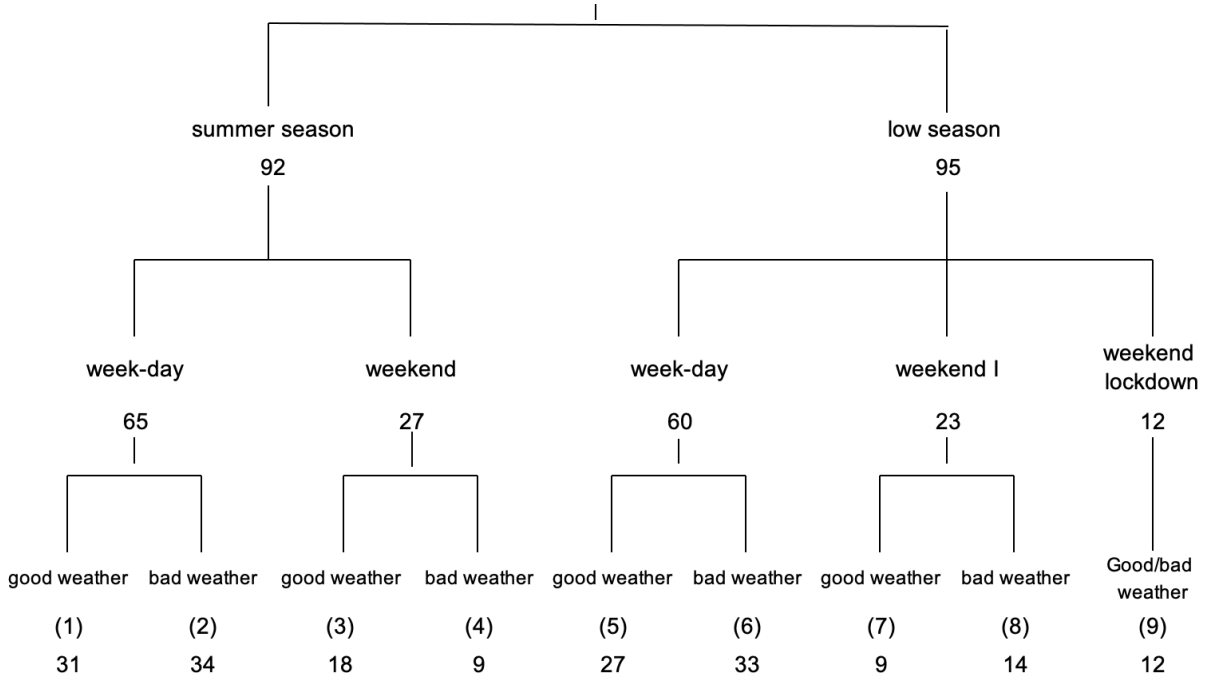


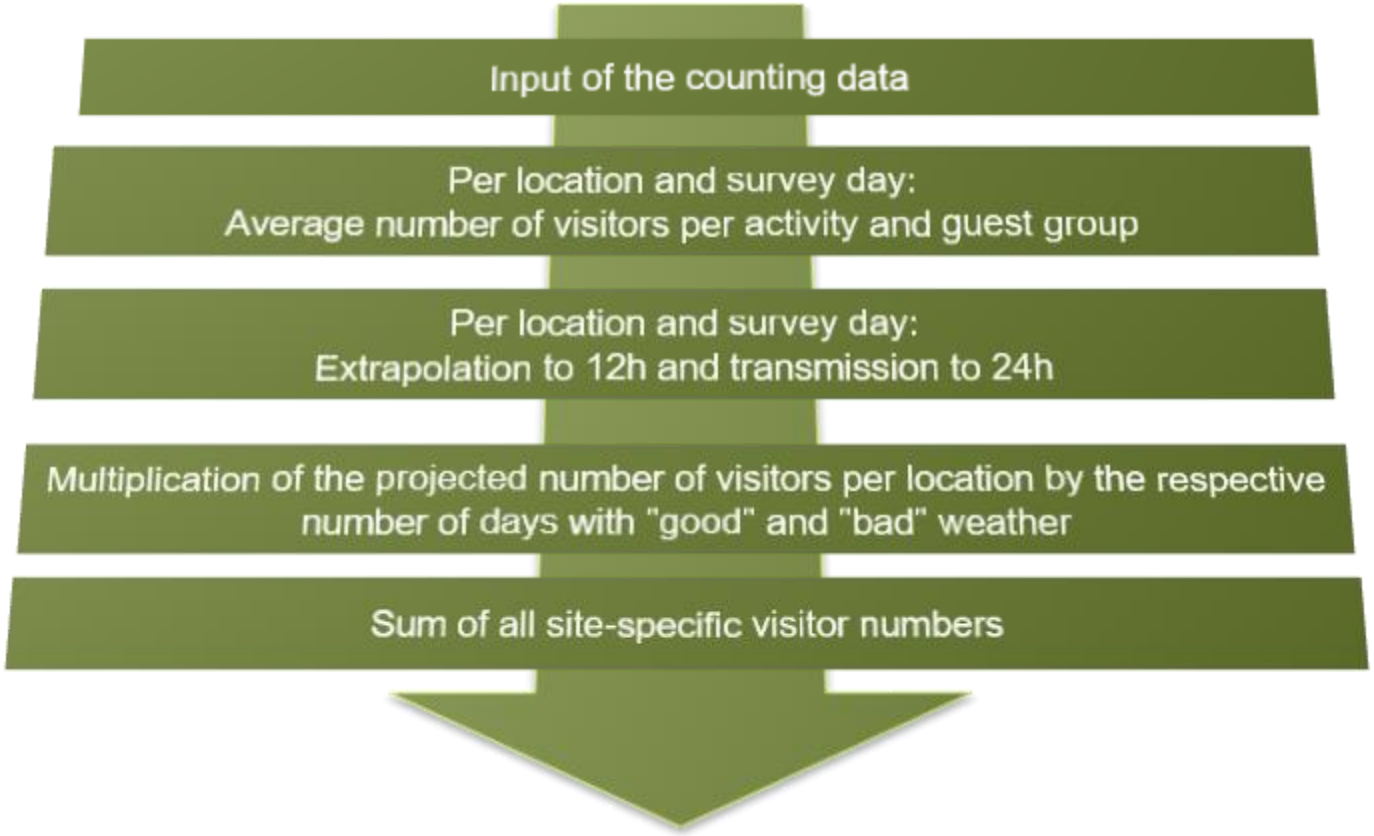
Socio-Economic Monitoring of PA

Step 1: Estimating the visitor structure

- Allocation of counting days according to weather conditions ("good" or "bad" day) and weekday or weekend
- Determination of the number of visitors for an ideal typical day



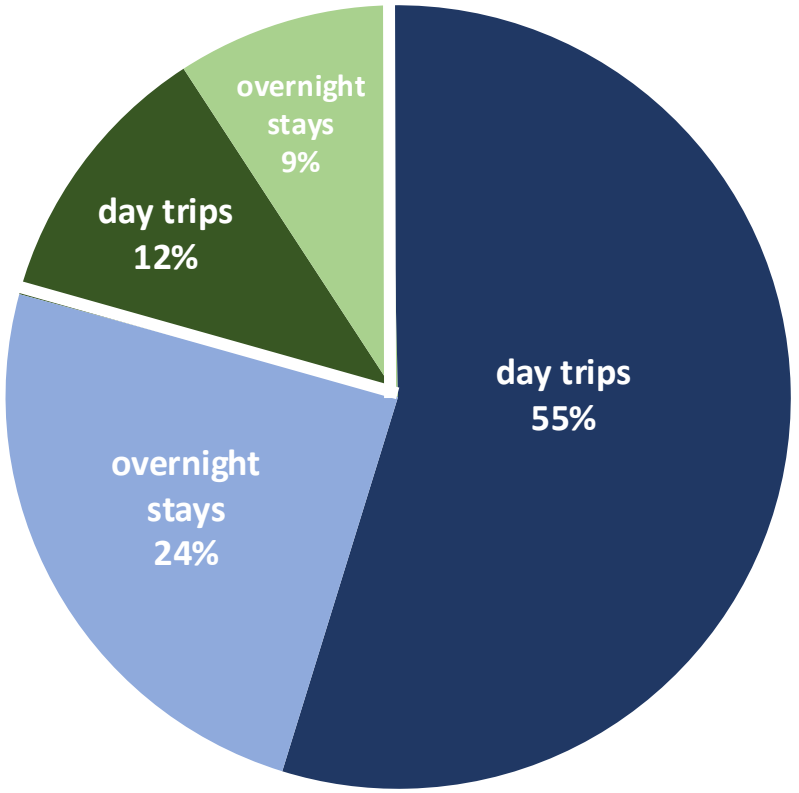
Socio-Economic Monitoring of PA

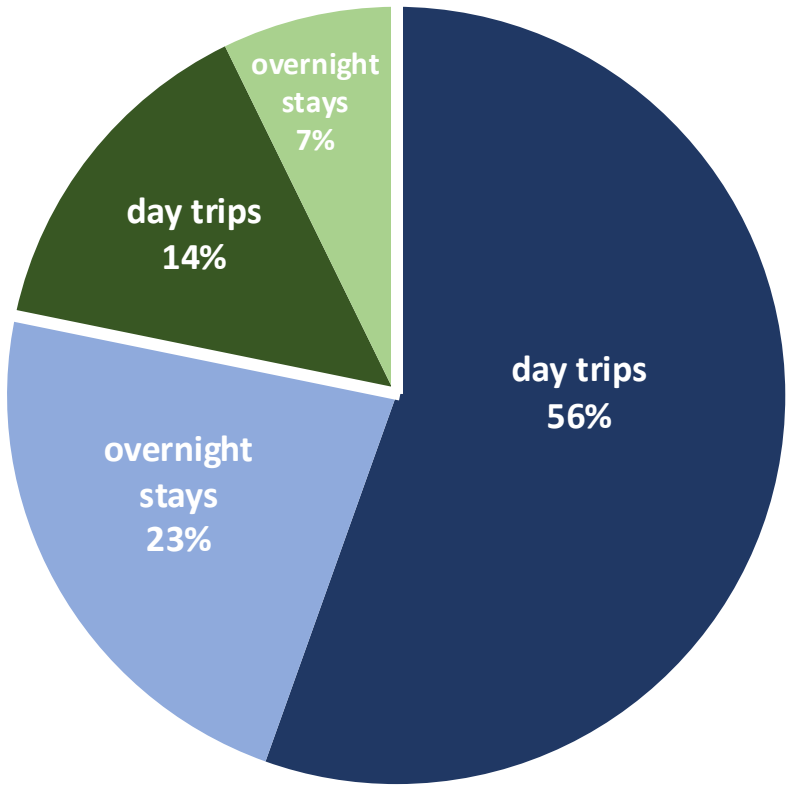


Socio-Economic Monitoring of PA

Example BR Schorfheide-Chorin

2020/21	2017/18
Visitor days: 2,540,000	Visitor days: 3,202,000
Specific BR visitors (20,4%)	Specific BR visitors (21,5%)
Other BR visitors (79,6%)	Other BR visitors. (78,5%)





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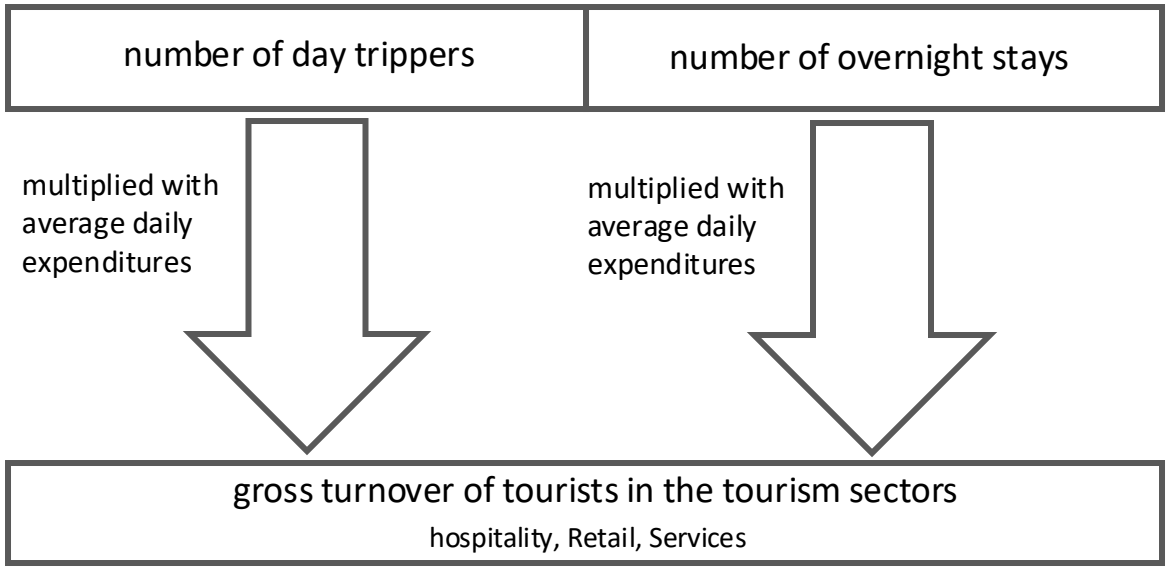
Socio-Economic Monitoring of PA

Step 2: Estimating gross turnover



Socio-Economic Monitoring of PA

Step 2: Estimating gross turnover

How to estimate turnovers?

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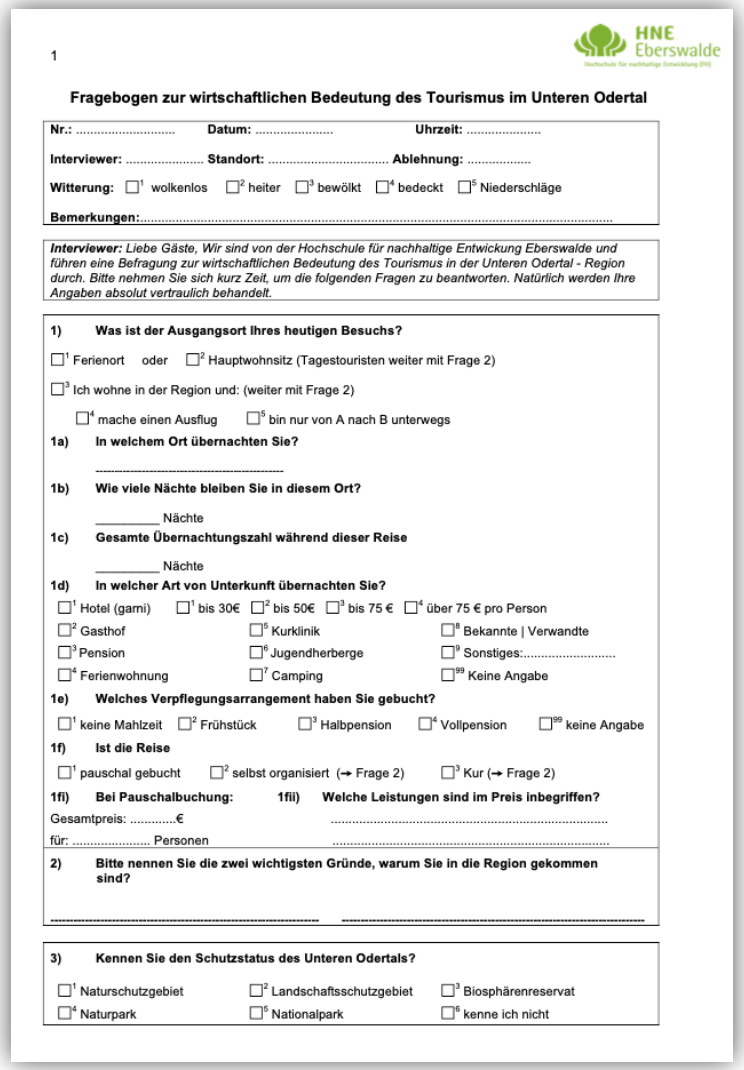

1

HNE Eberswalde

Fragebogen zur wirtschaftlichen Bedeutung des Tourismus im Unteren Odertal

Nr.: ..... **Datum:** ..... **Uhrzeit:** .....

Interviewer: ..... **Standort:** ..... **Ablehnung:** .....

Witterung: ☐[1] wolkenlos ☐[2] heiter ☐[3] bewölkt ☐[4] bedeckt ☐[5] Niederschläge

Bemerkungen:.....

Interviewer: *Liebe Gäste, Wir sind von der Hochschule für nachhaltige Entwicklung Eberswalde und führen eine Befragung zur wirtschaftlichen Bedeutung des Tourismus in der Unteren Odertal - Region durch. Bitte nehmen Sie sich kurz Zeit, um die folgenden Fragen zu beantworten. Natürlich werden Ihre Angaben absolut vertraulich behandelt.*

1) Was ist der Ausgangsort Ihres heutigen Besuchs?

☐[1] Ferienort oder ☐[2] Hauptwohnsitz (Tagestouristen weiter mit Frage 2)

☐[3] Ich wohne in der Region und: (weiter mit Frage 2)

☐[4] mache einen Ausflug ☐[5] bin nur von A nach B unterwegs

1a) In welchem Ort übernachten Sie?

1b) Wie viele Nächte bleiben Sie in diesem Ort?

_____ Nächte

1c) Gesamte Übernachtungszahl während dieser Reise

_____ Nächte

1d) In welcher Art von Unterkunft übernachten Sie?

☐[1] Hotel (garni) ☐[1] bis 30€ ☐[2] bis 50€ ☐[3] bis 75 € ☐[4] über 75 € pro Person

☐[2] Gasthof ☐[5] Kurklinik ☐[8] Bekannte | Verwandte

☐[3] Pension ☐[6] Jugendherberge ☐[9] Sonstiges:.....

☐[4] Ferienwohnung ☐[7] Camping ☐[99] Keine Angabe

1e) Welches Verpflegungsarrangement haben Sie gebucht?

☐[1] keine Mahlzeit ☐[2] Frühstück ☐[3] Halbpension ☐[4] Vollpension ☐[99] keine Angabe

1f) Ist die Reise

☐[1] pauschal gebucht ☐[2] selbst organisiert (→ Frage 2) ☐[3] Kur (→ Frage 2)

1fi) Bei Pauschalbuchung: **1fii) Welche Leistungen sind im Preis inbegriffen?**

Gesamtpreis: .....€ .....

für: ..... Personen .....

2) Bitte nennen Sie die zwei wichtigsten Gründe, warum Sie in die Region gekommen sind?

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3) Kennen Sie den Schutzstatus des Unteren Odertals?

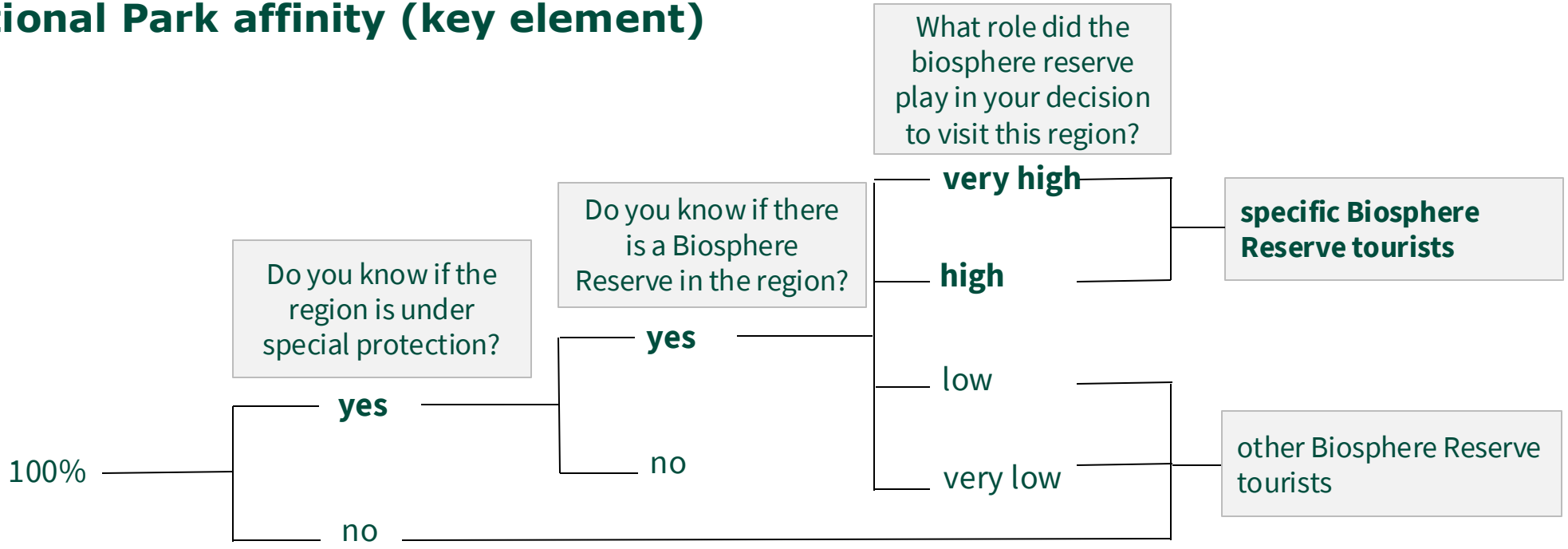
☐[1] Naturschutzgebiet ☐[2] Landschaftsschutzgebiet ☐[3] Biosphärenreservat

☐[4] Naturpark ☐[5] Nationalpark ☐[6] kenne ich nicht

Socio-Economic Monitoring of PA

Step 2: Estimating gross turnover

National Park affinity (key element)



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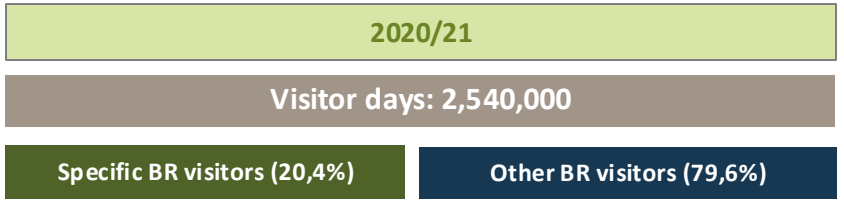
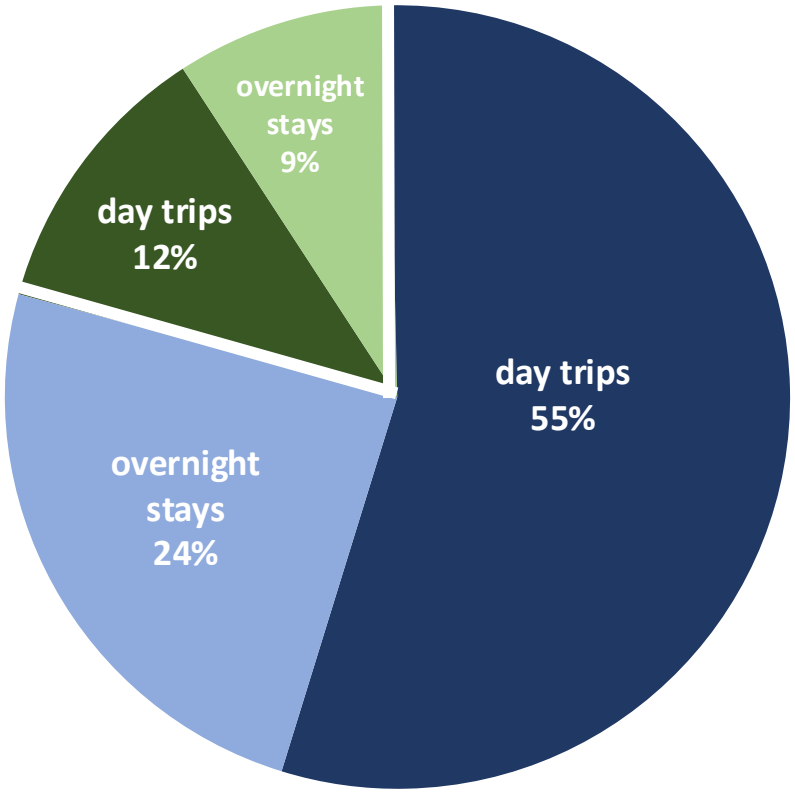
Example BR Schorfheide-Chorin

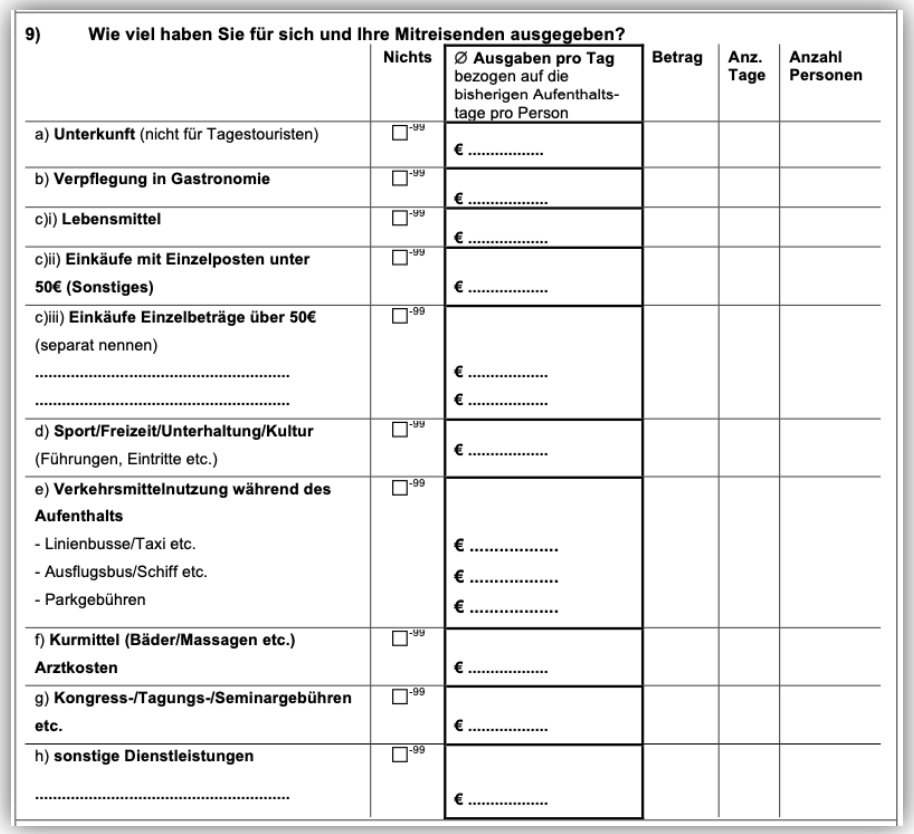




Socio-Economic Monitoring of PA

Step 2: Estimating gross turnover

Asking for expenses



9) Wie viel haben Sie für sich und Ihre Mitreisenden ausgegeben?	Nichts	Ø Ausgaben pro Tag bezogen auf die bisherigen Aufenthalts-tage pro Person	Betrag	Anz. Tage	Anzahl Personen
a) **Unterkunft** (nicht für Tagestouristen)	☐-99	€			
b) **Verpflegung in Gastronomie**	☐-99	€			
c)i) **Lebensmittel**	☐-99	€			
c)ii) **Einkäufe mit Einzelposten unter 50€ (Sonstiges)**	☐-99	€			
c)iii) **Einkäufe Einzelbeträge über 50€** (separat nennen)	☐-99	€ ..... €			
d) **Sport/Freizeit/Unterhaltung/Kultur** (Führungen, Eintritte etc.)	☐-99	€			
e) **Verkehrsmittelnutzung während des Aufenthalts** - Linienbusse/Taxi etc. - Ausflugsbus/Schiff etc. - Parkgebühren	☐-99	€ ..... € ..... €			
f) **Kurmittel (Bäder/Massagen etc.) Arztkosten**	☐-99	€			
g) **Kongress-/Tagungs-/Seminargebühren etc.**	☐-99	€			
h) **sonstige Dienstleistungen**	☐-99	€			

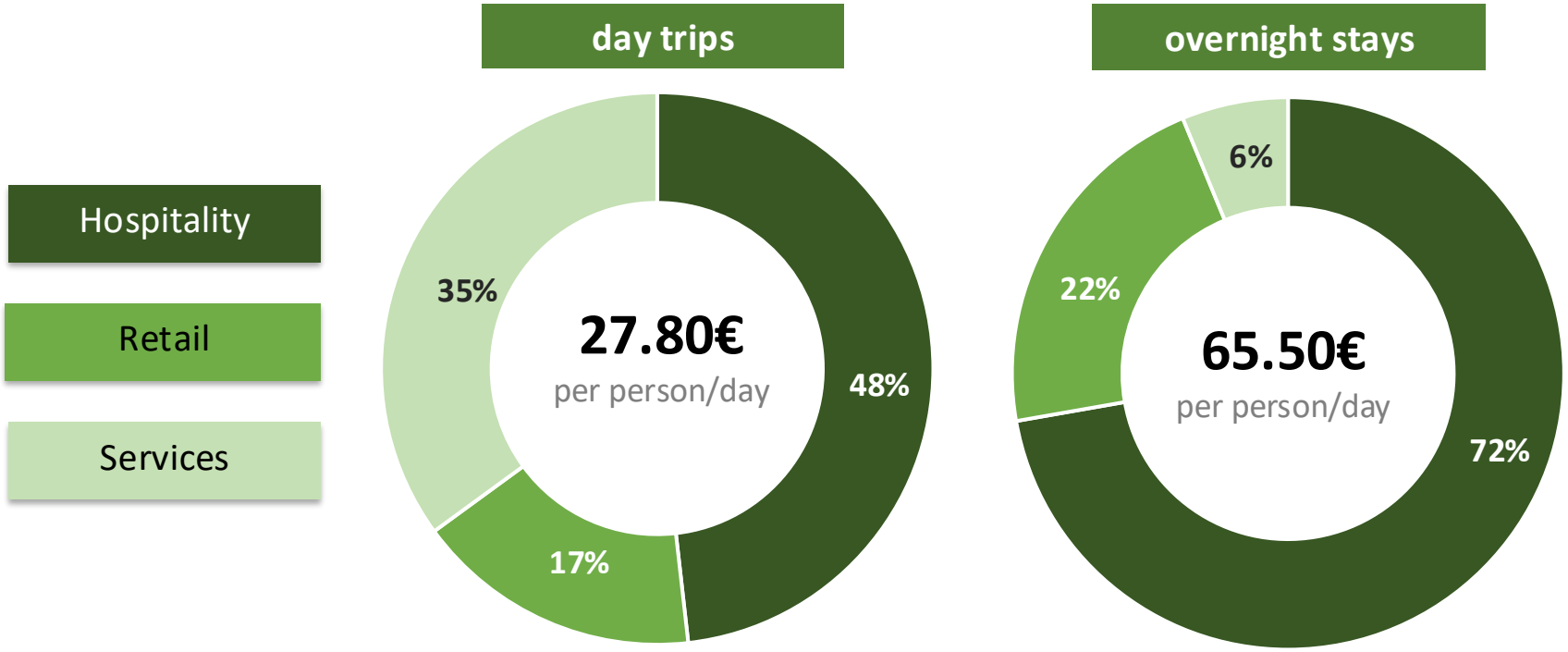
Socio-Economic Monitoring of PA

	Segment	Visitor days		Daily expenses		Turnover (rounded)
Specific Biosphere Reserve visitors	Overnight stays	224,554	x	52.98 €	=	11,896,800 €
	Day trips	294,587	x	24.40 €	=	7,187,300 €
		=				=
	TOTAL	519,141	x	36.76 €	=	**19,084,100 €**
Other Biosphere Reserve visitors	Overnight stays	621,661	x	70.03 €	=	43,531,800 €
	Day trippers	1,351,359	x	28.51 €	=	38,522,000 €
		=				=
	TOTAL	1,973,020	x	40.58 €	=	**82,053,800 €**

Total **101,137,900 € in 2020/21**

Socio-Economic Monitoring of PA

Step 2: Estimating gross turnover



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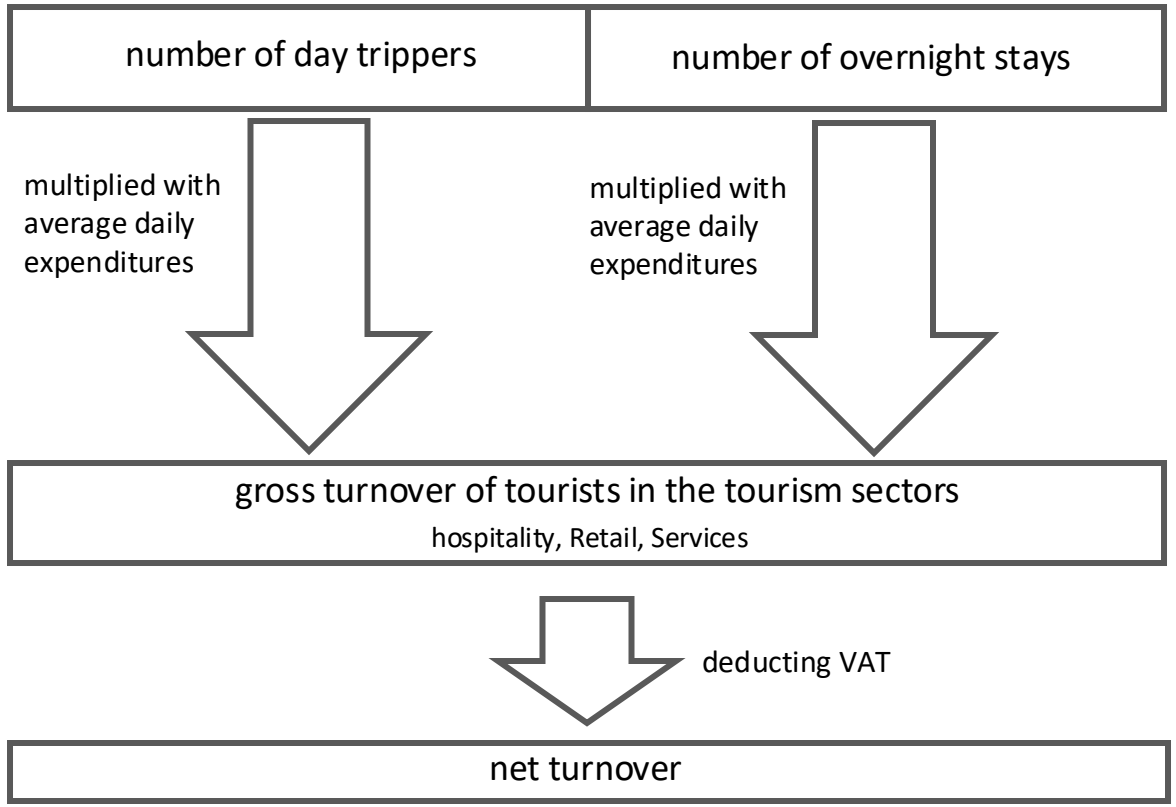
Step 3: Estimating net turnover



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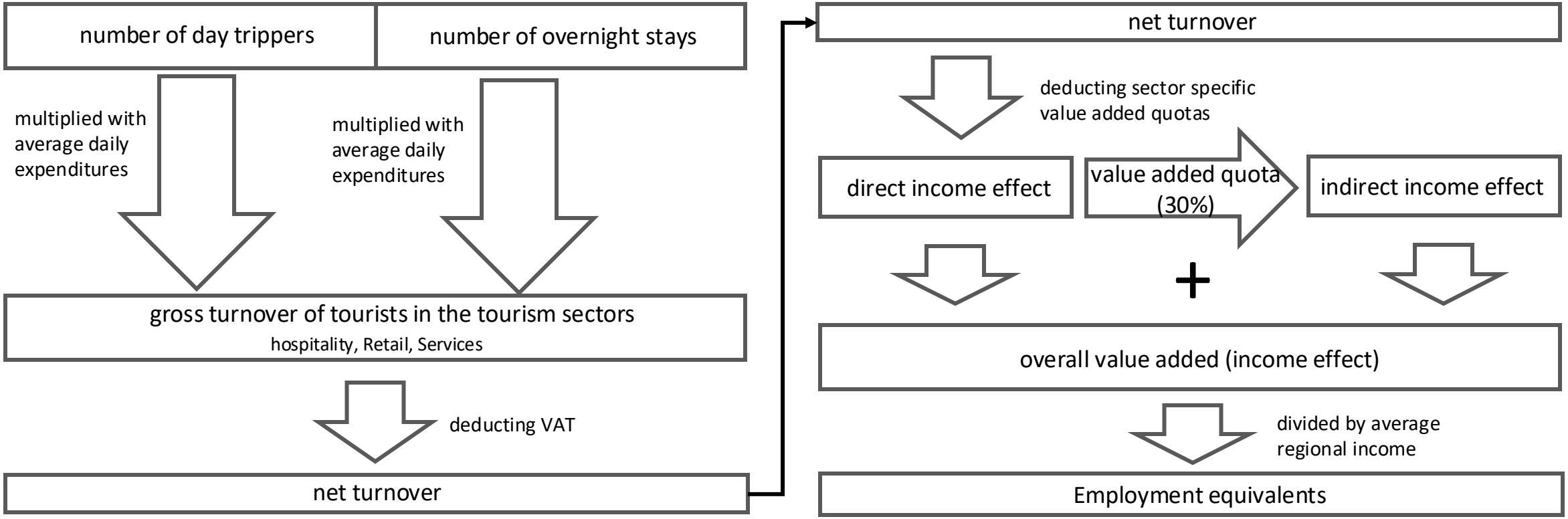
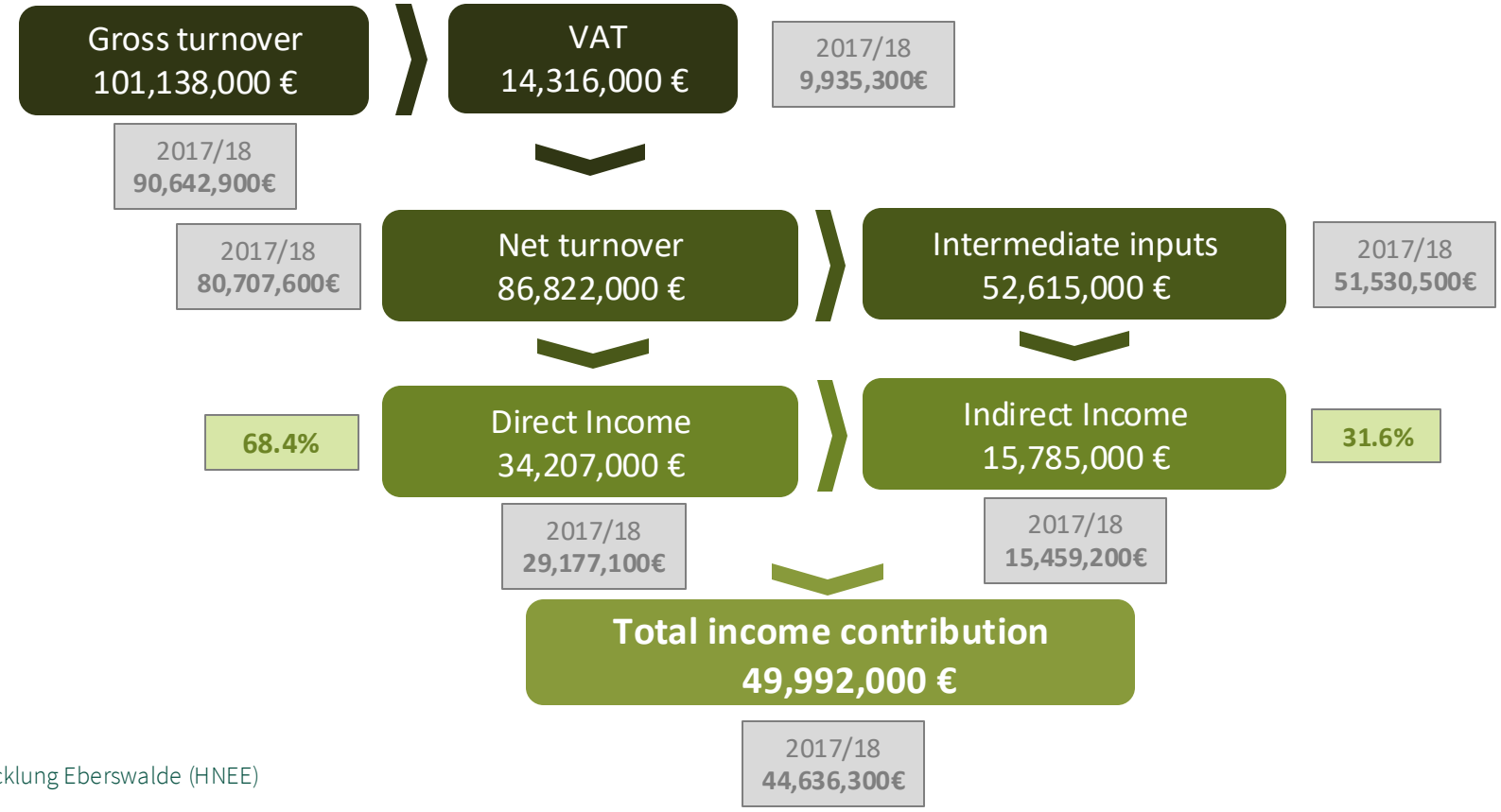
Step 4: Estimating the economic value



Socio-Economic Monitoring of PA

Step 4: Estimating the economic value



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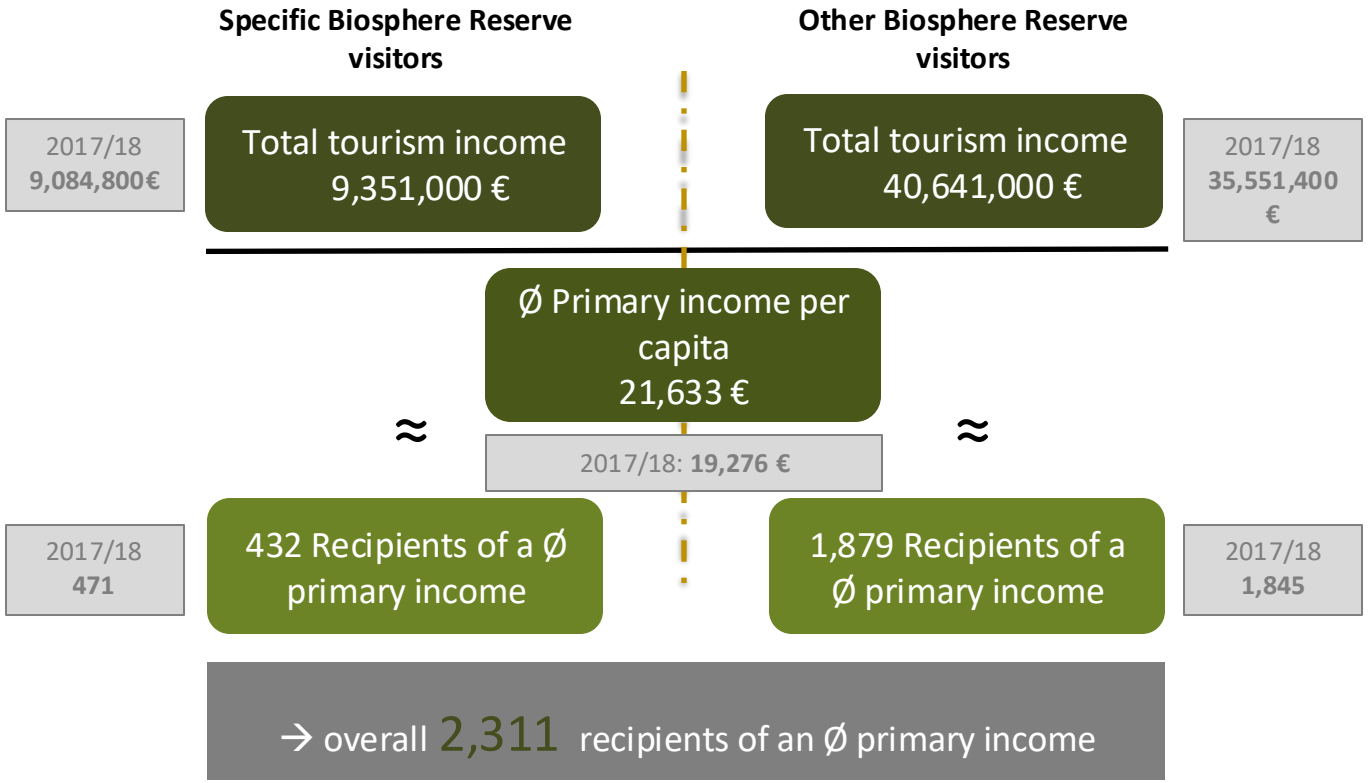
Step 5: Estimating employment equivalents



Socio-Economic Monitoring of PA

Step 6: Overall results

	Total			Specific Biosphere Reserve visitors			Other Biosphere Reserve visits		
	2017/18	2020/21	*21/18*	2017/18	2020/21	*21/18*	2017/18	2020/21	*21/18*
Ø Daily expenses	28.31 €	40.58 €	*145%*	n.a.	36.76 €	-	n.a.	41.59 €	-
Ø Daily expenses day-trips	18.63 €	27.77 €	*149%*	17.20€	24.40 €	*142%*	19.00€	28.51 €	*150%*
Ø Daily expenses overnight stays	50.68 €	65.50 €	*129%*	47.70 €	52.98 €	*111%*	51.60€	70.03 €	*136%*
Gross turnover	90,642,900 €	101,137,964 €	*112%*	18,818,100 €	19,084,165 €	*101%*	71,824,800 €	82,053,798 €	*114%*
Gross turnover day trips	41,638,800 €	45,709,324 €	*110%*	7,894,800€	7,187,347 €	*91%*	33,744,000 €	38,521,977 €	*114%*
Gross turnover overnight stays	49,004,100 €	55,428,640 €	*113%*	10,923,300 €	11,896,818 €	*109%*	38,080,800 €	43,531,821 €	*114%*
Tourism income	44,636,300 €	49,991,776 €	*112%*	n.a.	9,351,125 €	-	n.a.	40,640,652 €	-
Direct tourism income	29,177,100 €	34,207,346 €	*117%*	n.a.	6,290,864 €	-	n.a.	27,916,483 €	-
Indirect tourim income	15,459,200 €	15,784,430 €	*102%*	n.a.	3,060,261 €	-	n.a.	12,724,169 €	-
Income equivalent	2,316	2,311	*100%*	471	432	*92%*	1,845	1,879	*102%*

Socio-Economic Monitoring of PA

Strengths and Weaknesses of this method?

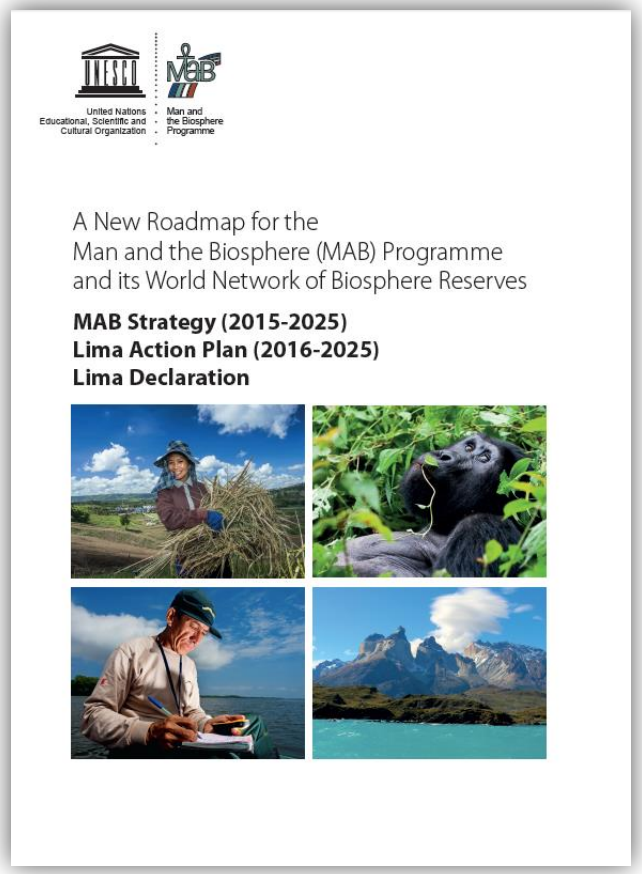
Socio-Economic Monitoring of PA

Do you want to know more about this method?

https://bogucki.home.pl/repozytorium/pomerania/socio-economic-research-in-protected-areas-of-the-euroregion-pomerania-visitor-satisfaction-economic-impacts-and-people-park-relationships.pdf

A „critical“ note for Biosphere Reserves

BR and Economic Effects of Tourism



- BR as model regions for an integrative achievement of Agenda 2030 *(UNESCO 2015)*
- Sustainable Tourism should contribute to fulfilling the BR function and is regarded as a central economic factor *(BMU 2018, Gehrlein & Mathias 2018)*
- According to the MAB Committee, tourism specific SDGs are particularly suitable for implementing the targets of BR in Germany *(German UNESCO Committee 2017)*

BR and Economic Effects of Tourism

Main goal of Green Economy

An economic system based on:

- environmental sustainability (total resource decoupling an natural regneration)
- economic profitability, and
- social inclusion.

→ Complements the concept of "sustainable development

→At UNCSD (2012), the green economy served as one of two guiding themes (alongside the institutional framework for sustainable development)

BR and Economic Effects of Tourism

- Recommended evaluation criteria of the MAB National Committee on the tertiary sector for sustainable management

Tabelle 11: Themenfelder und Indikator-Unterbereiche Kriterium 24

Mögliche Themen-felder Kriterium 24	Indikator-Unterbereiche:
Tourismus	IMP U33 Wertschöpfung im Tourismus*
	Qualitätsbetriebe
	Tourismusstrategie*
	Besucherlenkung*
	Tourismusmarketing
	Initiierte Projekte zur Förderung nachhaltiger Strukturen im Tourismus
	Zusammenarbeit mit Partnern im Bereich Tourismus
	Regionale Akteure und deren Produkte werden durch Einbindung in touristische Dienstleistungsketten unterstützt
	Schutz und Erhalt natürlicher und regionaltypischer Landschafts- und Ortsbilder*

(Gehrlein & Mathias 2018)

Monitoring needs to be complemented by other sustainability metrics

Integrated model as a „Socio-Economic Ecological Monitoring“