



UN-REDD
PROGRAMME



VALUATION OF FOREST ECOSYSTEMS IN CAMBODIA

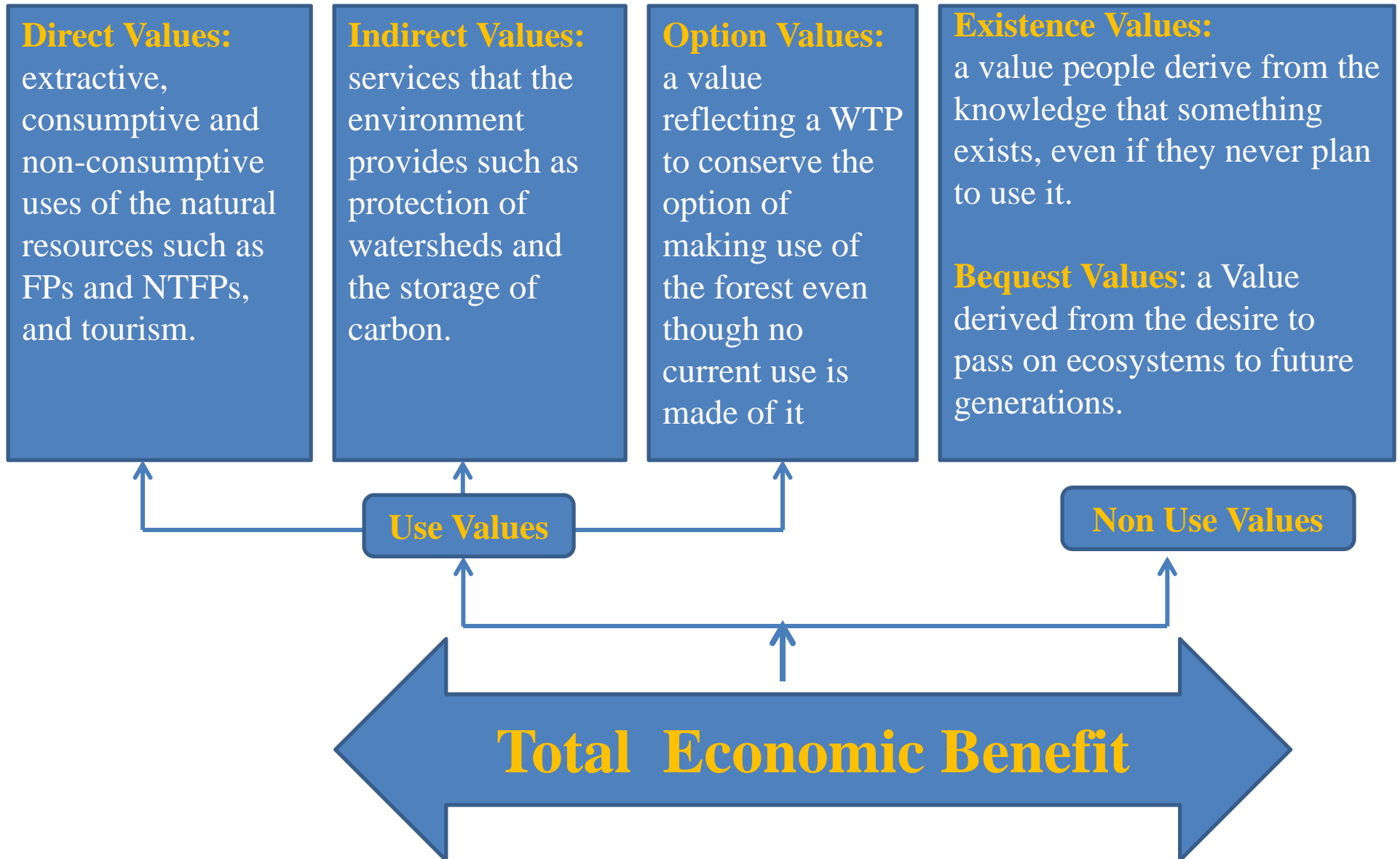
By
Ou Ratanak

Le Royal Hotel
01 April 2014

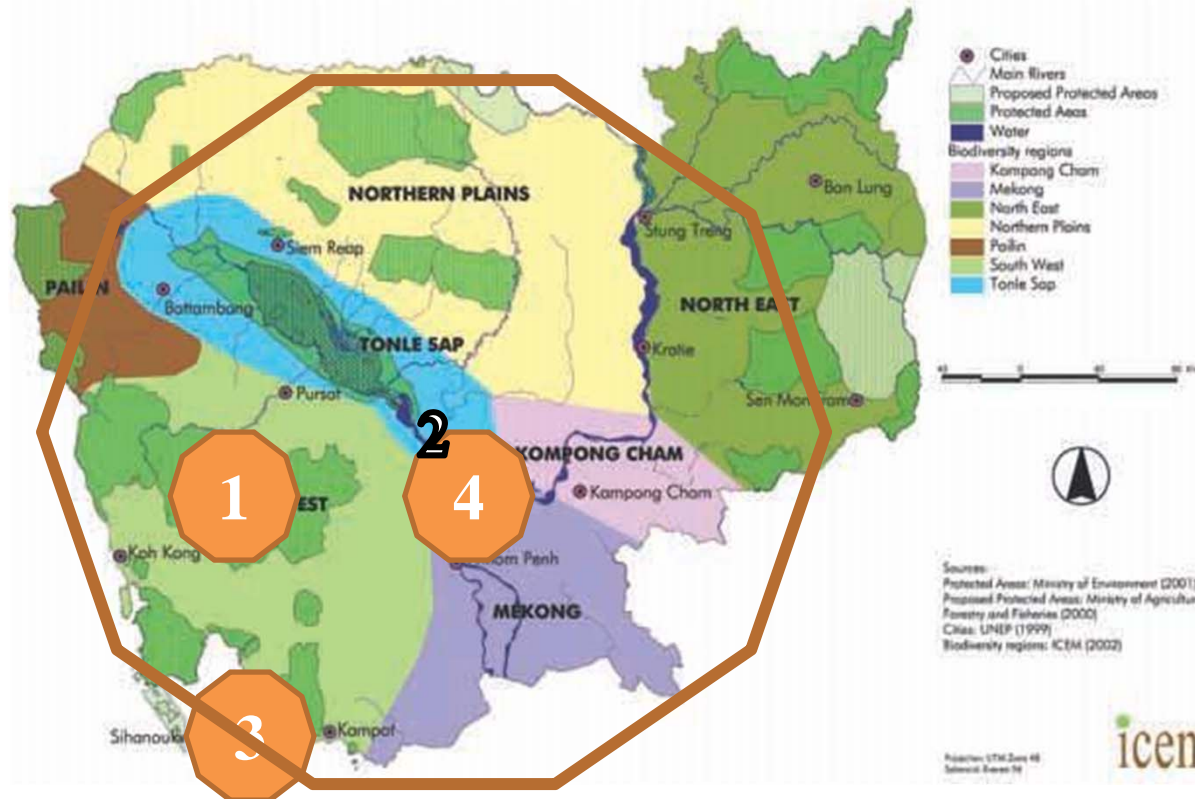
Outline

1. Overview of Total Economic Valuation
2. Use Values (UV)
3. Non Use Values
4. Conclusions

Total Economic Valuation



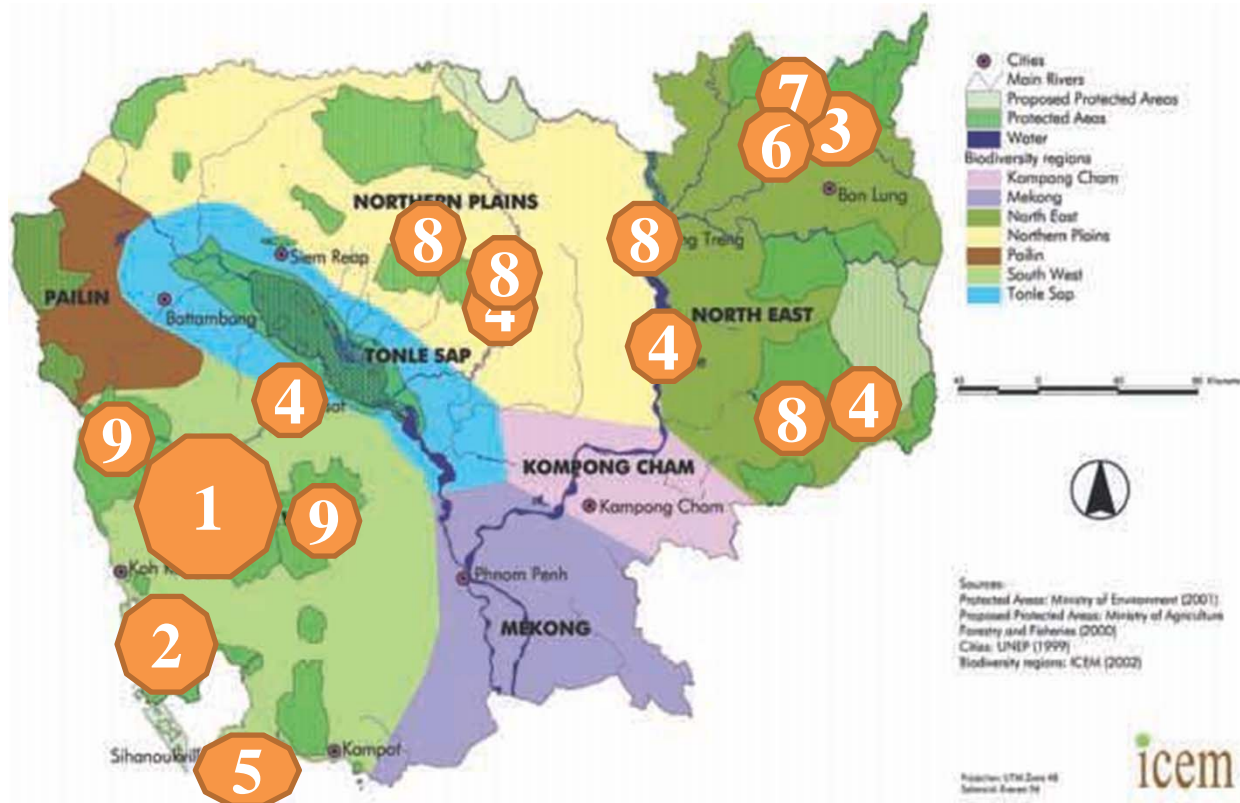
(UV)-Various estimates for values of forest products



No.	Category	Total Value (US\$/ha)	Harvestable Value/Income (US\$/ha/y)
1	Forest Products	1,100	
2	Forest products		10.41
3	Forestry & Logging		25.33 (2011)
4	Forestry & Logging		11.95 (2000)
5	Mangrove product harvesting		344
6	Flood forest		22
Average			82.74
Range			(10.41:344)

Source: 1. Soussan, 2010; 2. Sophanarith et al, 2004, 3. NIS, 2011, 4. NIS, 2011 5. Emerton et al, 2002 ; 6. Navy et al, 2001

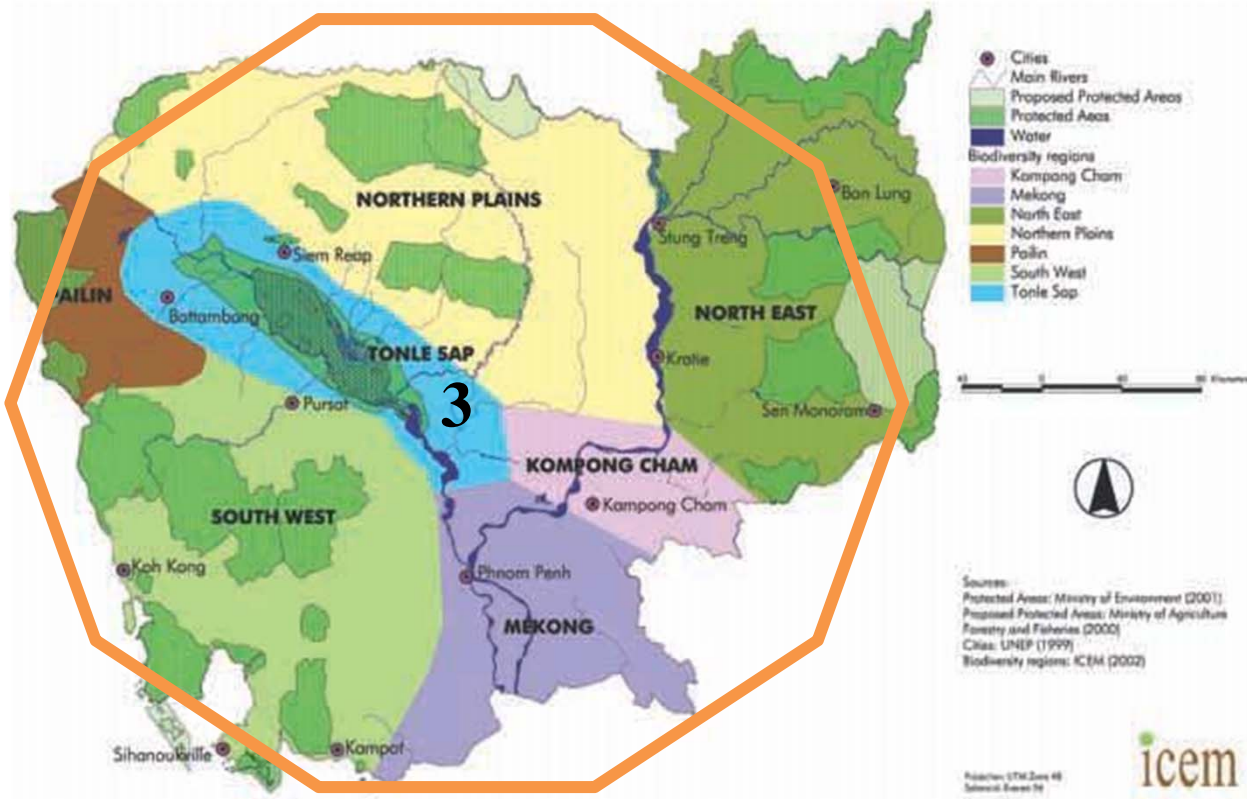
(UV)- Various estimates for values of NTFPs



No.	Category	Total Value (US\$/ha)	Harvestable Value/Income (US\$/h/y)
1	NTFPs	1,099	
2	NTFPs		1050
3	NTFPs (malva nut)		130
4	NTFPs		312.5
5	NTFPs		274.5
6	NTFPs		200
7	NTFPs		78.9
8	NTFPs (resin)		302
9	NTFPs		50
Average			299.74
Range			(50:1050)

Author: 1. Soussan, 2010; 2. Bann, 1997, 3. Sara et al, 2000; 4. Kasper and Neth, 2006; 5. De Lopex et al, 2001; 6. Bann 2003; 7. Sophanarith et al, 2008; 8. Prom, 2009; 9. Grieg et al, 2008

(UV)- Tourism and Recreation



No.	Category	Harvestable Value/Income (US\$/year)
1	Ecotourism	2,500
2	Ecotourism	16,000
3	Ecotourism	675,000
4	Ecotourism	37,416.77
5	Tourism	2,547,000,000

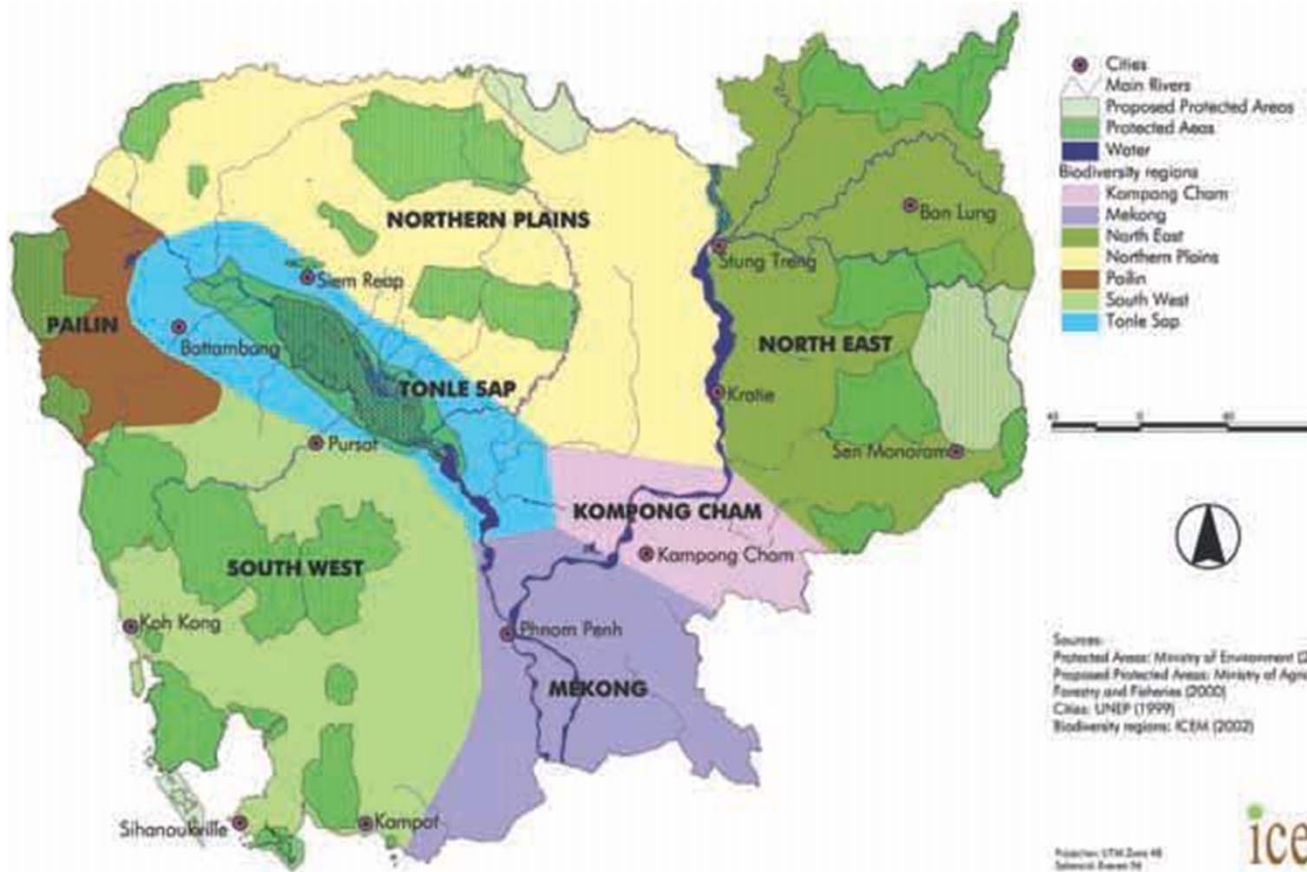
Source: Statistics and ICT Department, MOT

Author: 1. De Lopez et al, 2001; 2 & 3. Emerton et al, 2002; 4. Tom et al, 2008; 5. MoT, 2014

(UV)- Value of Biodiversity & Cultural & Spiritual

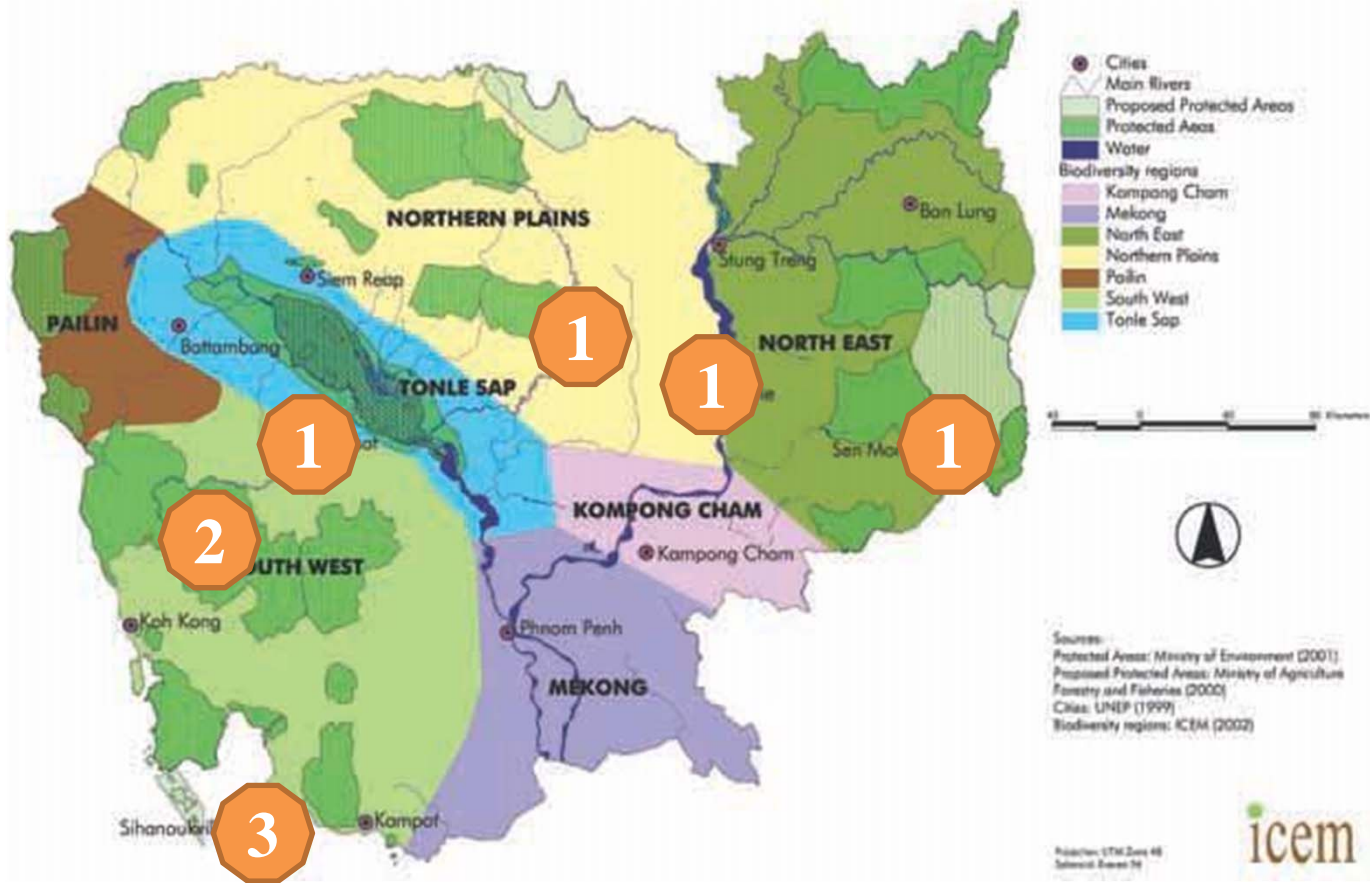


(UV)- Indirect Use Value



1	Soil Conservation	No Data
2	Water Purification	No Data
3	Nutrient Cycling	No Data
4	Pollination	No Data
5	Pest Control	No Data

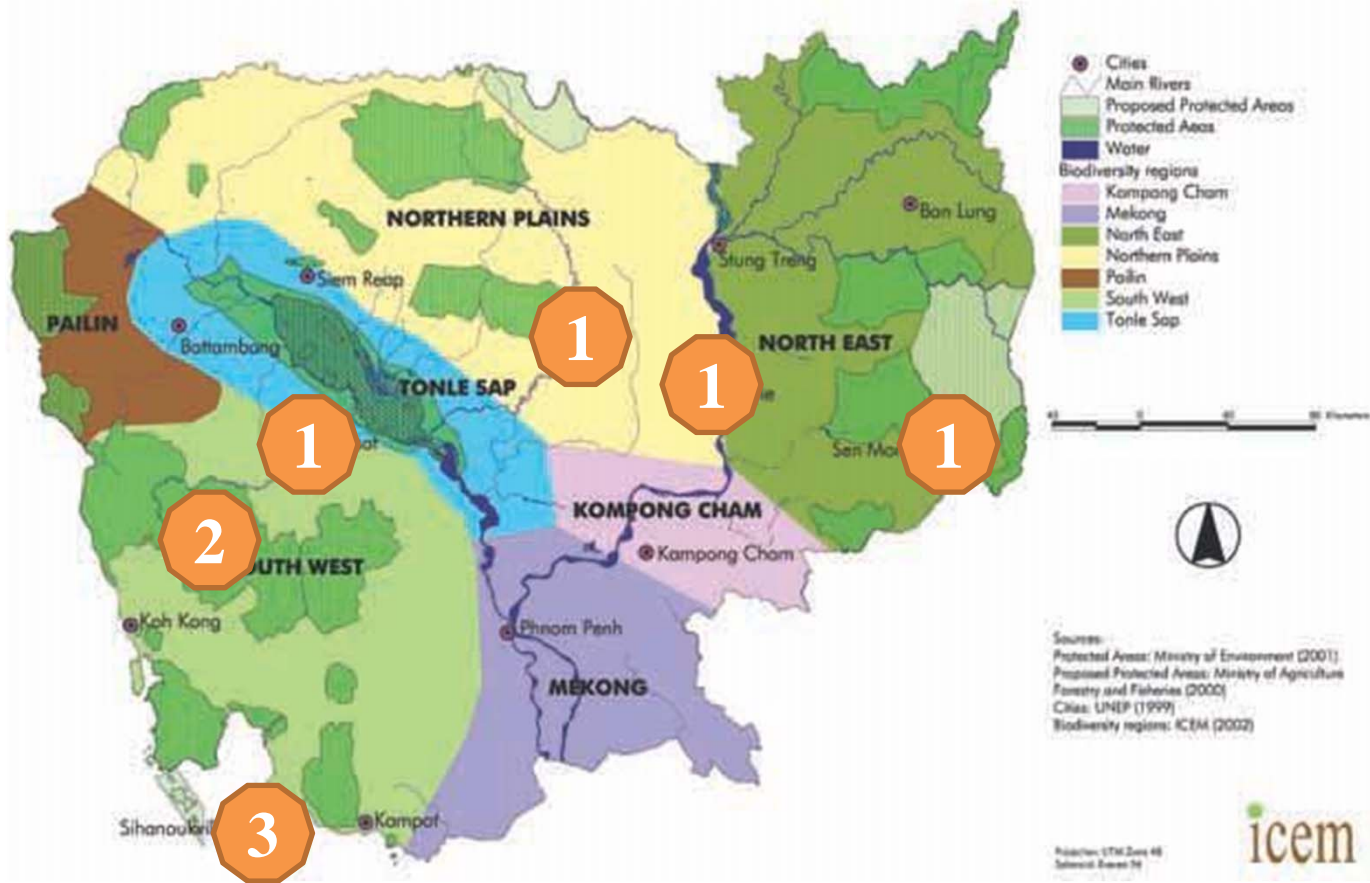
(UV)- Various estimates for values of Carbon Sequestration



No.	Category	Total Value (US\$/ha/y)
1	NPV of carbon (US\$/ha) over 50-year 10% discount	449
2	Carbon sequestration	9
3	Carbon sequestration	2.2
Average		153.45
Range		(2.2:449)

Author: 1. Kasper and Neth, 2006; 2. Soussan, 2010; 3. Bann, 1997

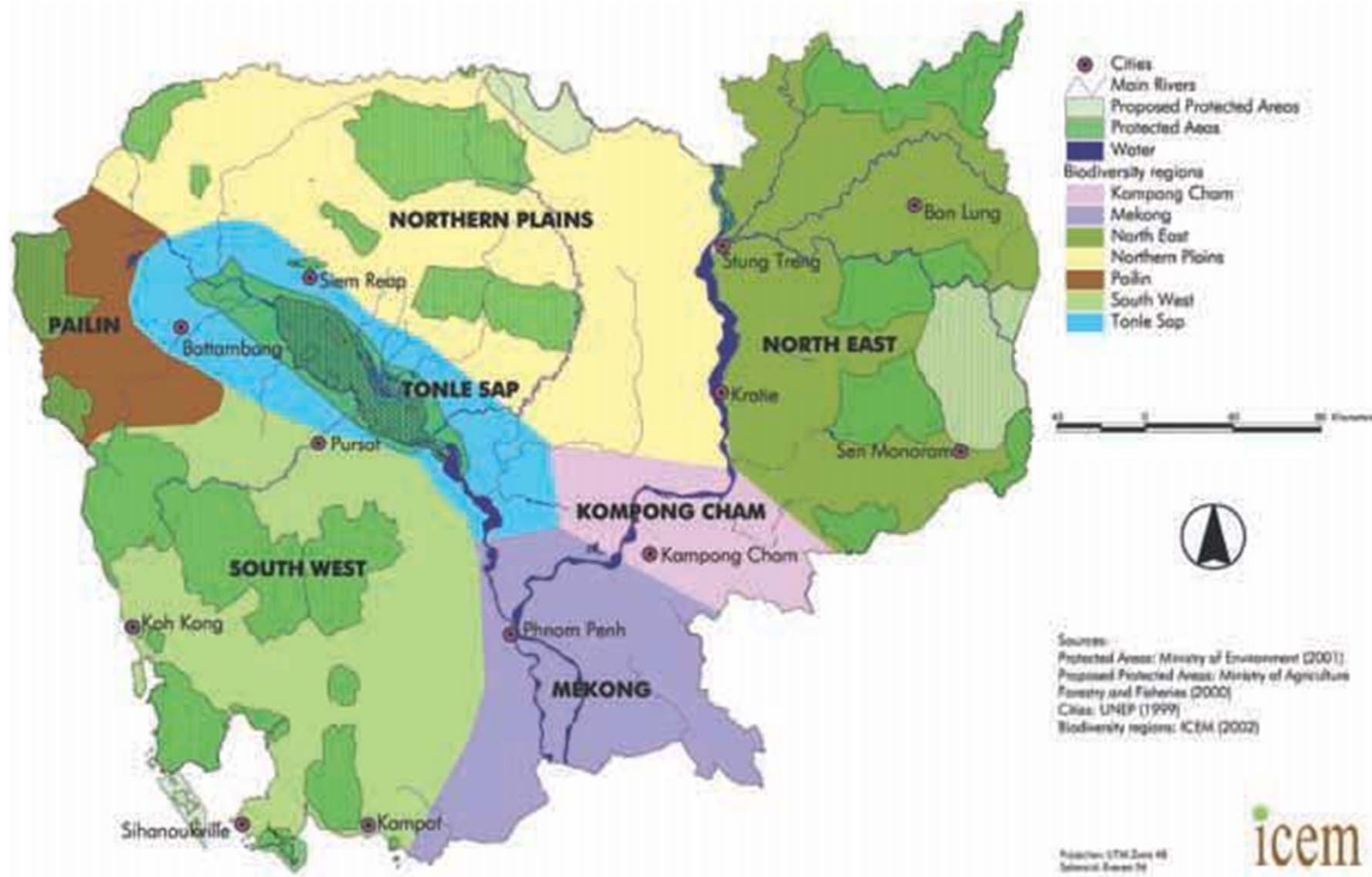
(UV)- Various estimates for values of Watershed Protection



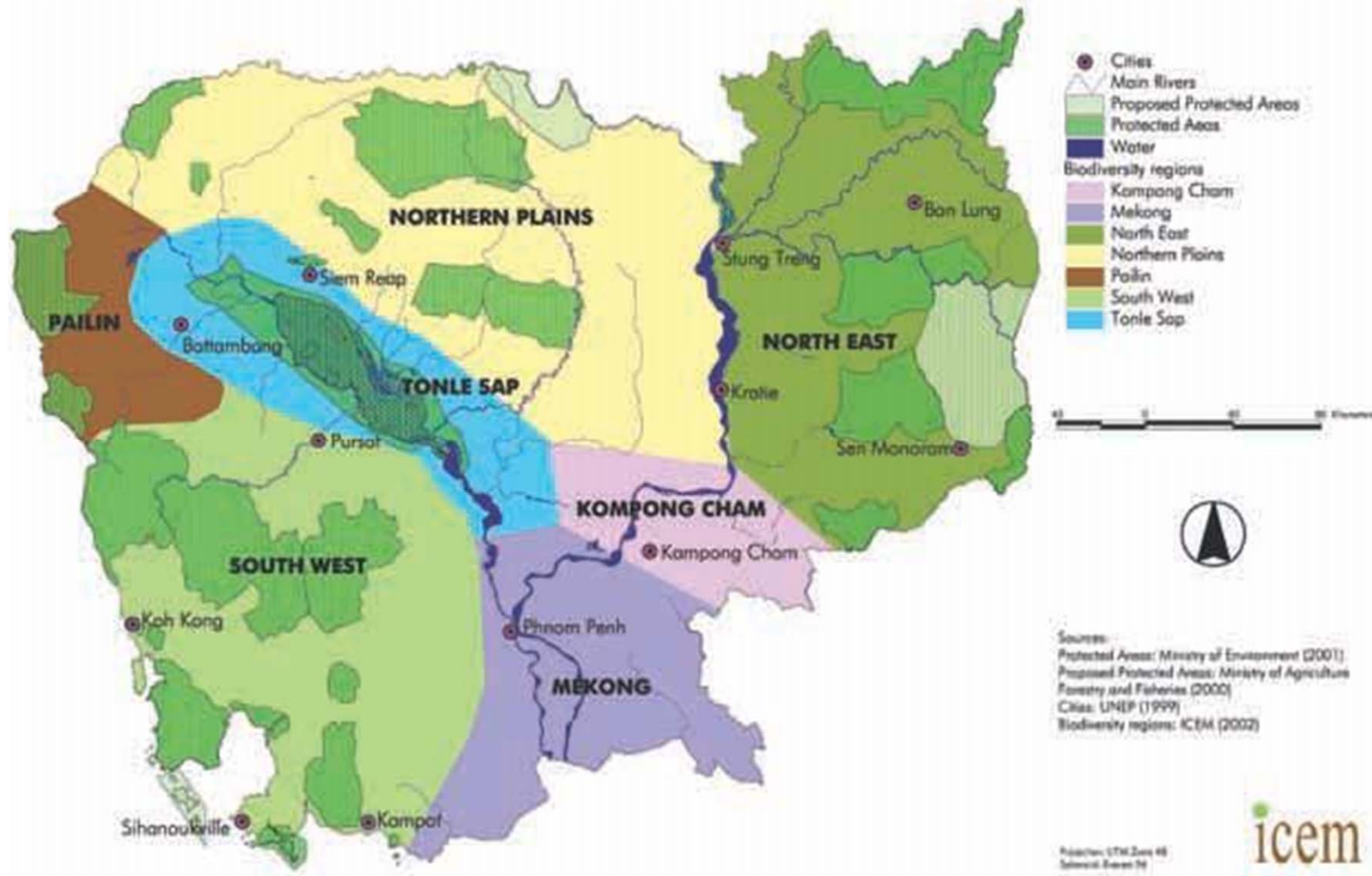
No.	Category	Total Value (US\$/ha/y)
1	NPV of watershed protection (US\$/ha) over 50-years, 10 percent discount	599.67
2	Watershed protection	188
3	Mangrove storm protection functions	176
Average		321.07
Range		(176:599.67)

Author: 1. Kasper and Neth, 2006; 2. Soussan, 2010; 3. Bann, 1997

(UV)-Option Value



Non Use Values (Existence & Bequest Value)



Conclusions

➤ **Direct Use Value:**

- FPs: 2 important case studies have been estimated the total value of FPs but these methods should be accepted and approved by the government
- NTFPs: many studies conducted but the results not shown the total value of NTFPs in Cambodia, just the total value of local community extracted from NTFPs. However, one study already estimated the total value of NTFPs. Thus, more studies should be carried out to estimate the total value of NTFPs in the stock sustainable uses.

Conclusions (con.)

➤ **Direct Use Value:**

- Tourism & Recreation: many studied already conducted, just yearly updated data from MoT
- Biodiversity & Culture: these fields are very important to build government and local community trust but very limited studied in these fields to convert them into monetary term. Thus, more studied and appropriated methods needed.

Conclusions (con.)

➤ **Indirect Use Value:**

- The valuing the indirect use studies from forest ecosystems are also very limited especially the estimation of soil conservation; water purification; nutrient cycling; pollination and pest control. Thus, more studies and appropriated methods needed.
- Carbon storage and sequestration: one study already estimated the total carbon stock, density for different land cover classes and forest type in Cambodia. Thus, the total value can be easily estimated.

Conclusions (con.)

➤ **Option Value:**

- Many areas have been converted to economic land concessions, but the valuing study these options limited. Thus, more studies and appropriated methods should be urgent established to compare these option values.

➤ **Non Use Value:**

- Many protected areas and protected forest have been set aside with total areas of 18% of the country, but the valuing study limited. Thus, more studies and appropriated methods should be established.

THANK YOU