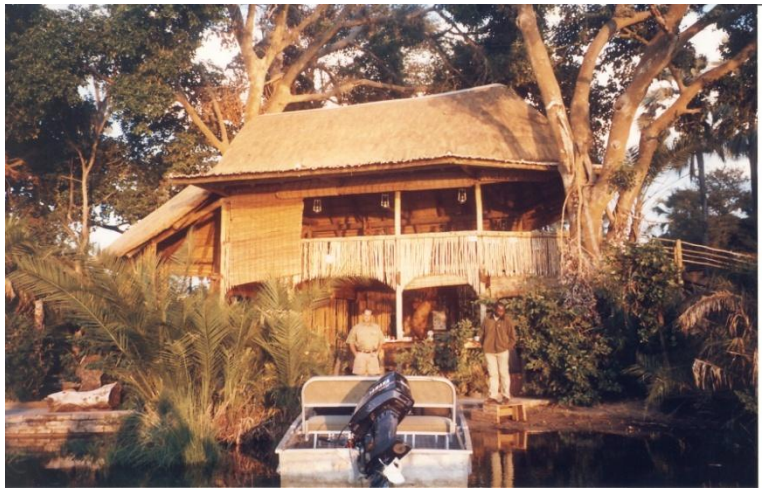
Okavango river basin TDA
Understanding the social and economic information

[Jl Barnes - July 2009]

Outline

- **Background**
- **Country values**
- **Development impacts**
- **Broader basin values**



Basin TDA - Approach

- **River-based (flow related) tourism and natural resource use**
- **Household livelihoods:**
  - **Fish, reeds, grass, crops, livestock tourism**
  - **Water quality, well-being**
- **Economic impacts**
  - **Tourism and household impact**
  - **Indirect and non-use values**
- **Overall impact**

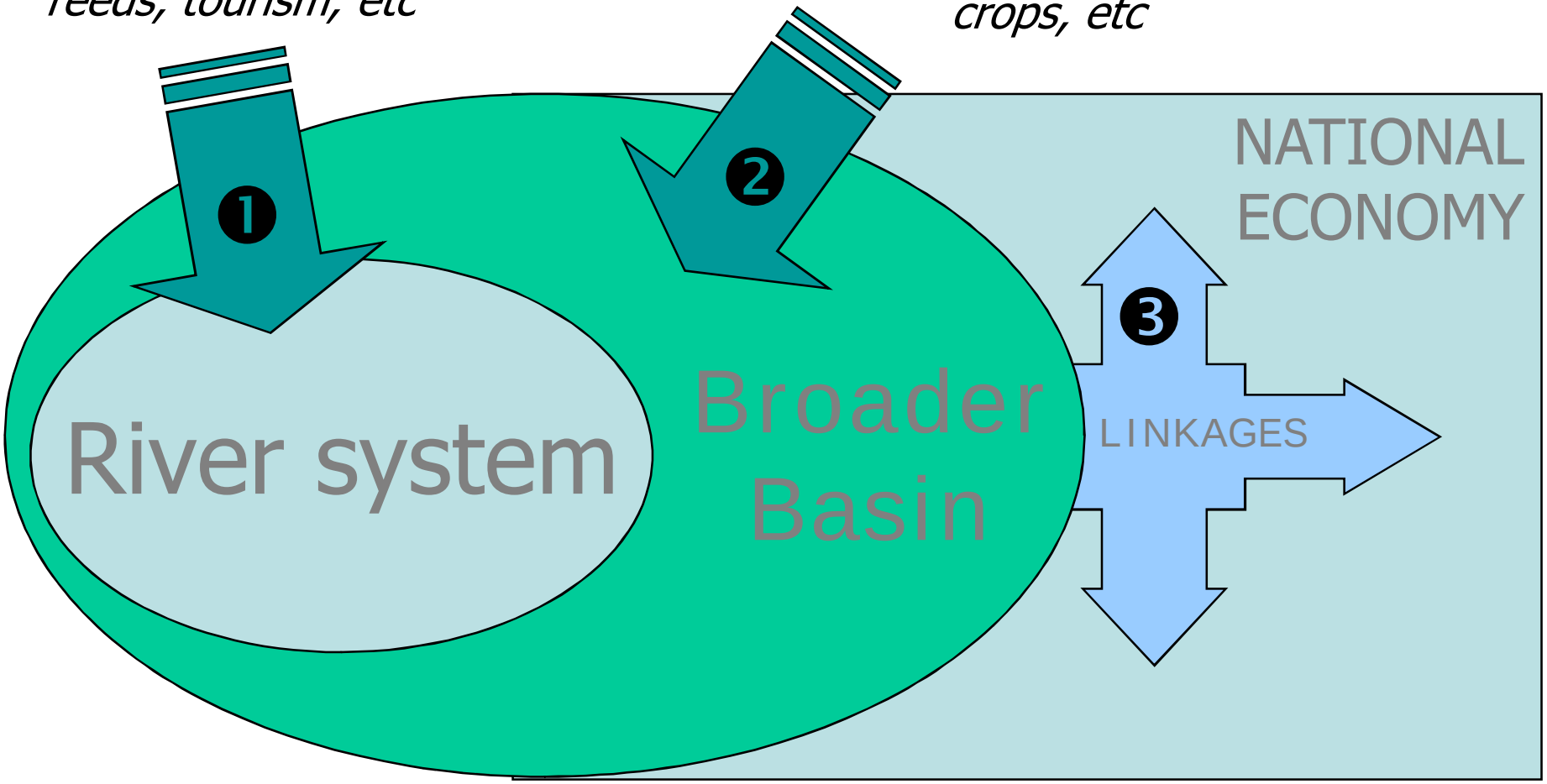
Basin TDA – Valuation

- Literature, focus groups, key informants, survey
- Enterprise models developed, adapted
- EFA model to measure impacts of development options
- Extrapolate

Direct use values – Impact on GNP

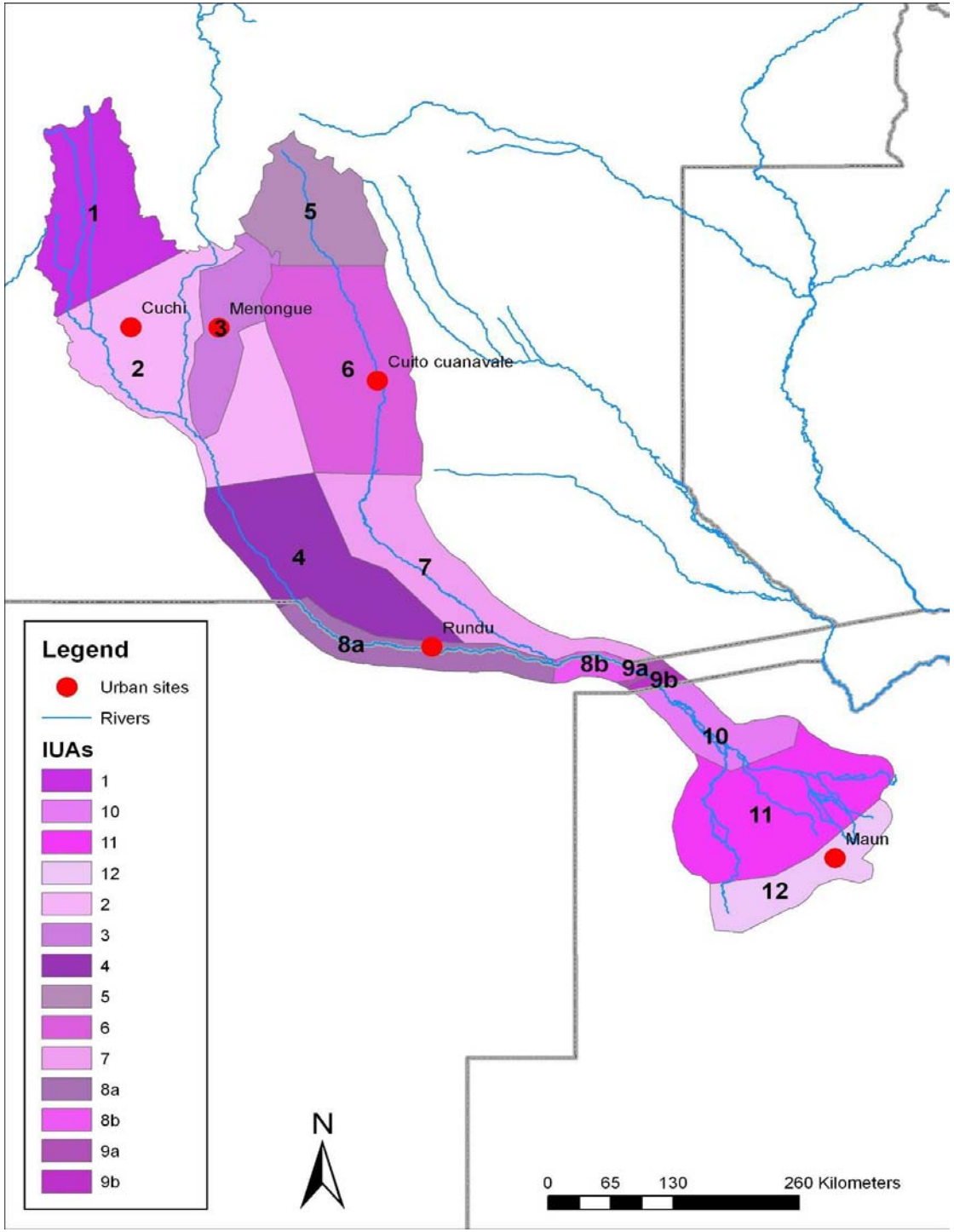
Direct value added from use of RIVER resources – *fish, reeds, tourism, etc*

Direct value added from use of LINKED BASIN resources – *woodland use, grazing, dryland crops, etc*



IUAs

- Integrated units of analysis
- IUAs 1 to 7 in Angola
- IUAs 8 and 9 in Namibia
- IUAs 10, 11 and 12 in Botswana
- Floodplains increase as go down basin

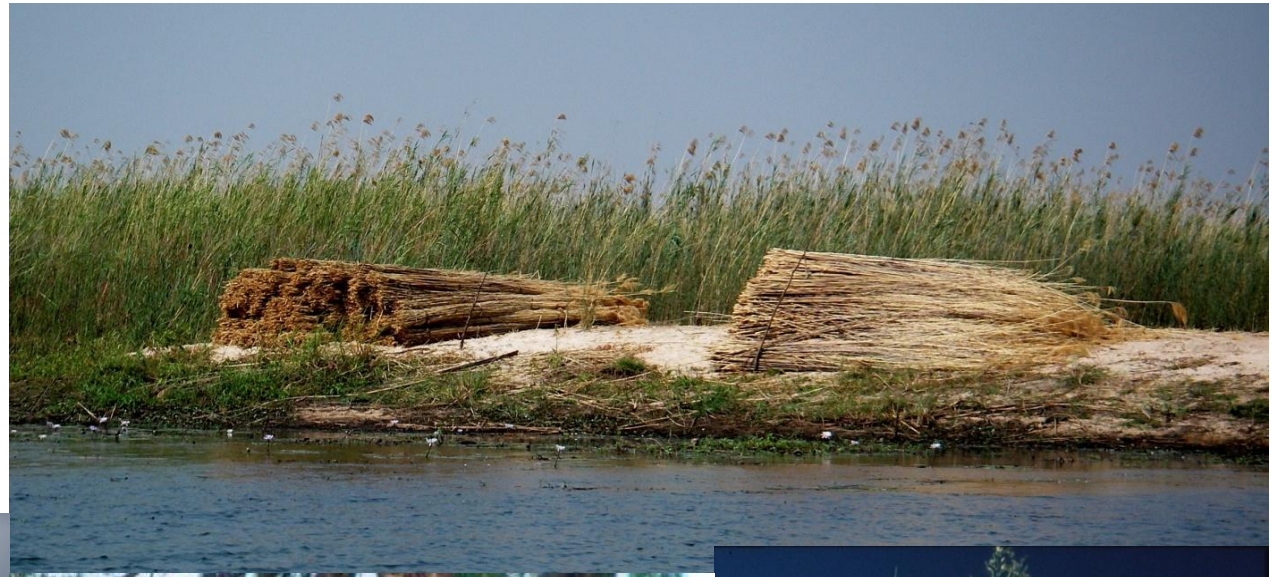


List of Indicators

1. Household income - fish	Total income change as % PD	a. Household income %PD	A. SOCIAL WELL-BEING FOR LOCAL HOUSEHOLDS (=a+b+c)	C (=A+B). Overall socio-economic well-being
2. Household income - reeds				
3. Household income - floodplain grass				
4. Household income - floodplain gardens (e.g. molapo)				
5. Household income and wealth - livestock				
6. Household income - tourism				
7. Potable water/water quality		b. Potable water/water quality %PD		
8. Wellbeing/welfare from intangibles		c. Wellbeing/welfare from intangibles %Pd		
9.1 Macro effects from tourism income excluding hh (including multipliers)		d. National income (=9.1+9.2+9.3 +9.4) %PD	B. ECONOMIC-WELL BEING (nationally)	
9.2 Macro effects from hh income 1-6 (including multipliers etc.)				
9.3 Indirect use				
9.4 non-use				

Fishing

Reeds



Floodplain grass

Floodplain crops

Floodplain grazing

Tourism

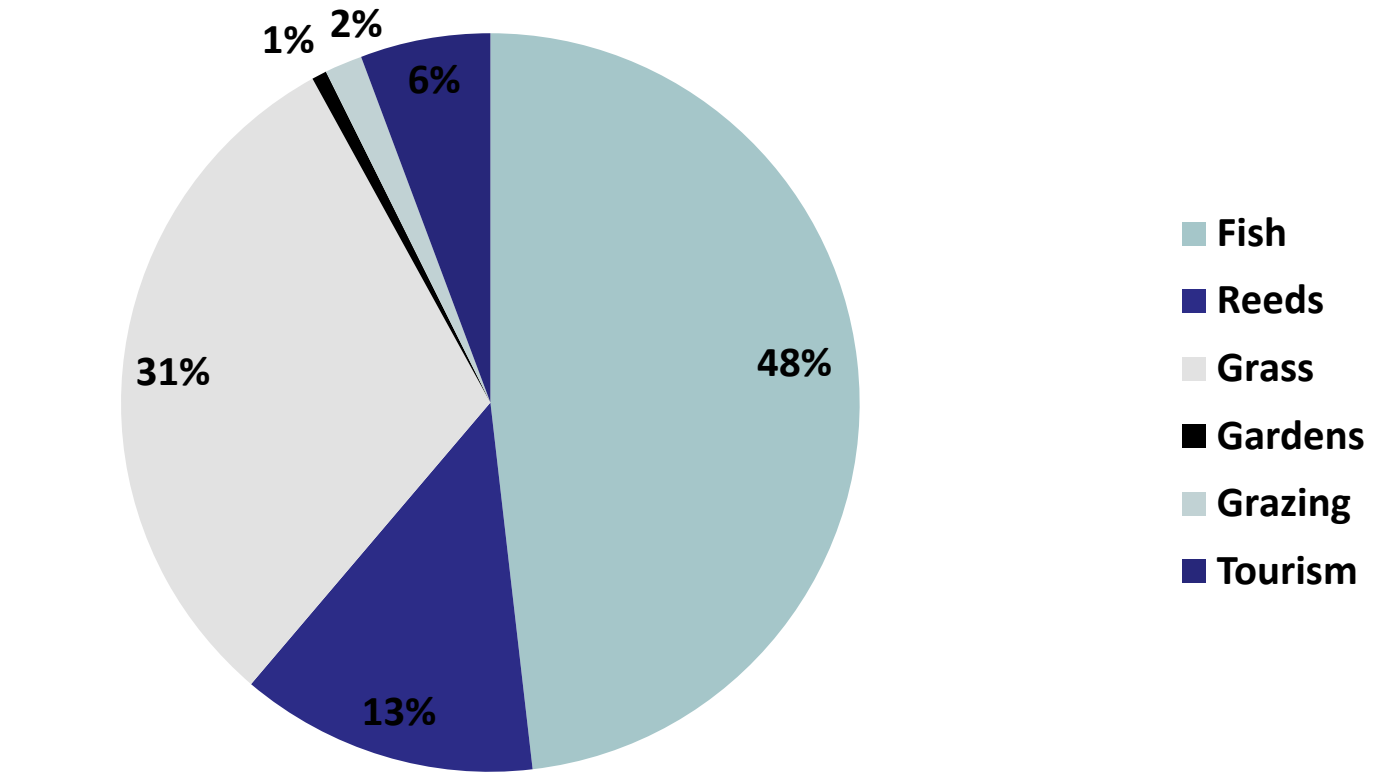
Overall wellbeing

Indirect use values

Non-use values

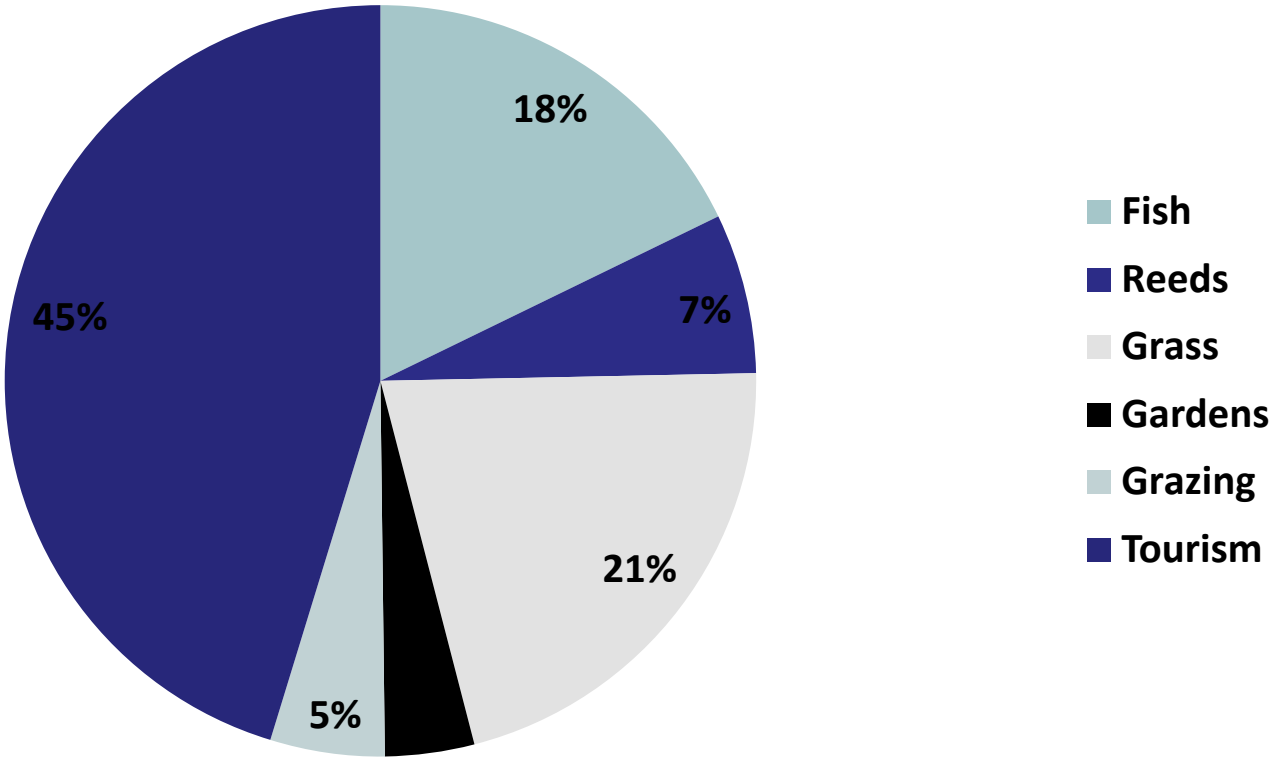
Values related to livelihoods in Angola, Namibia and Botswana

Angola – Okavango river basin tourism and natural resource use
livelihood net income

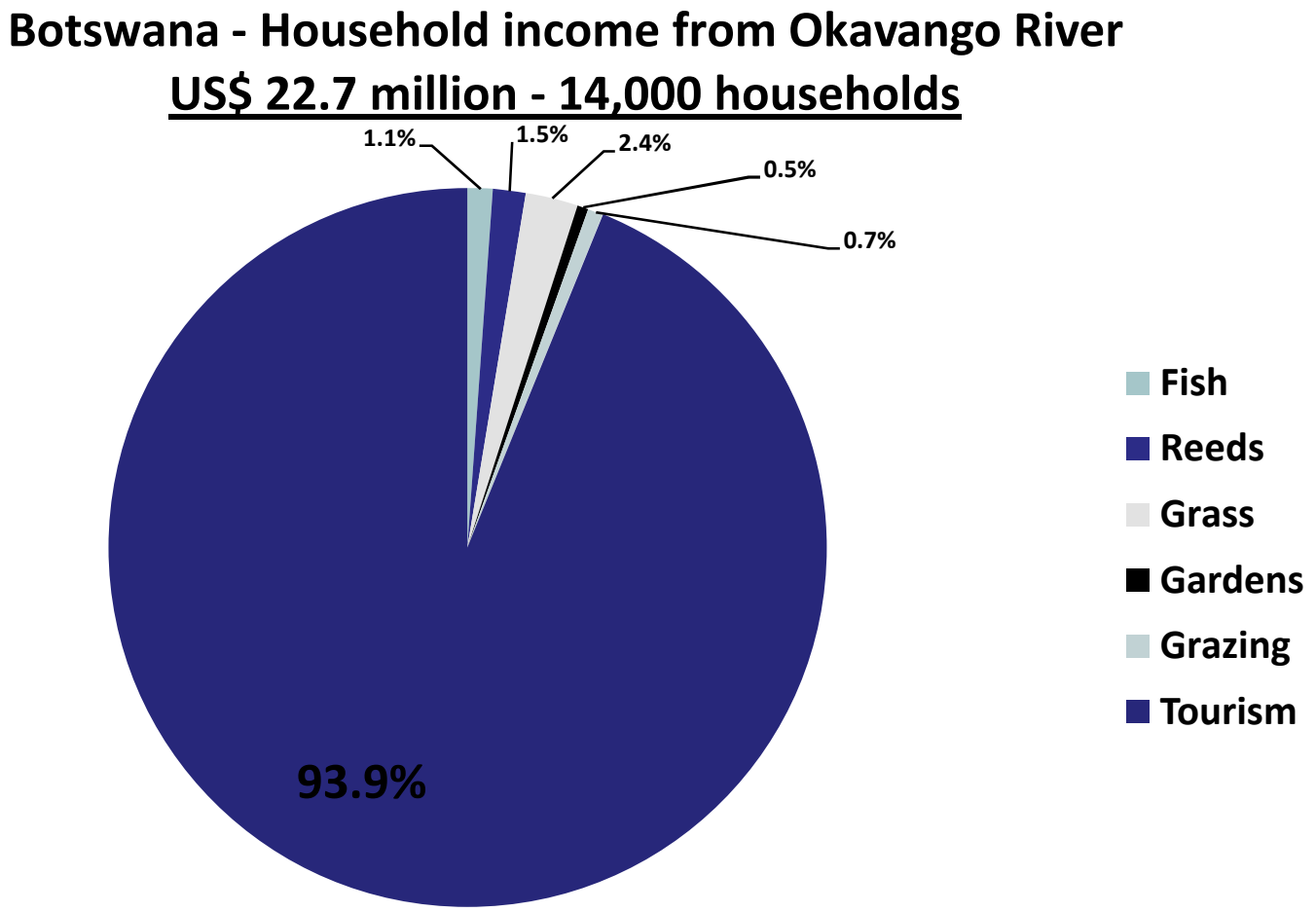


Namibia – Okavango river-based tourism and natural resource use
household net income

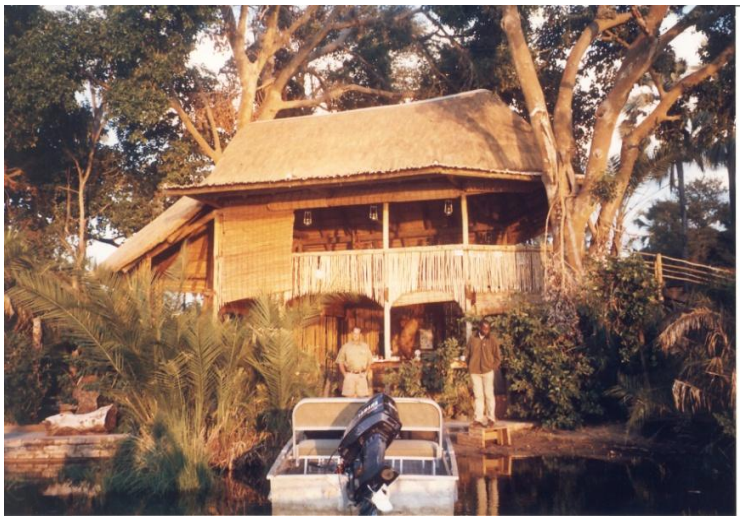
Namibia - Household income from Okavango River
US$ 8.2 million – 35,000 households



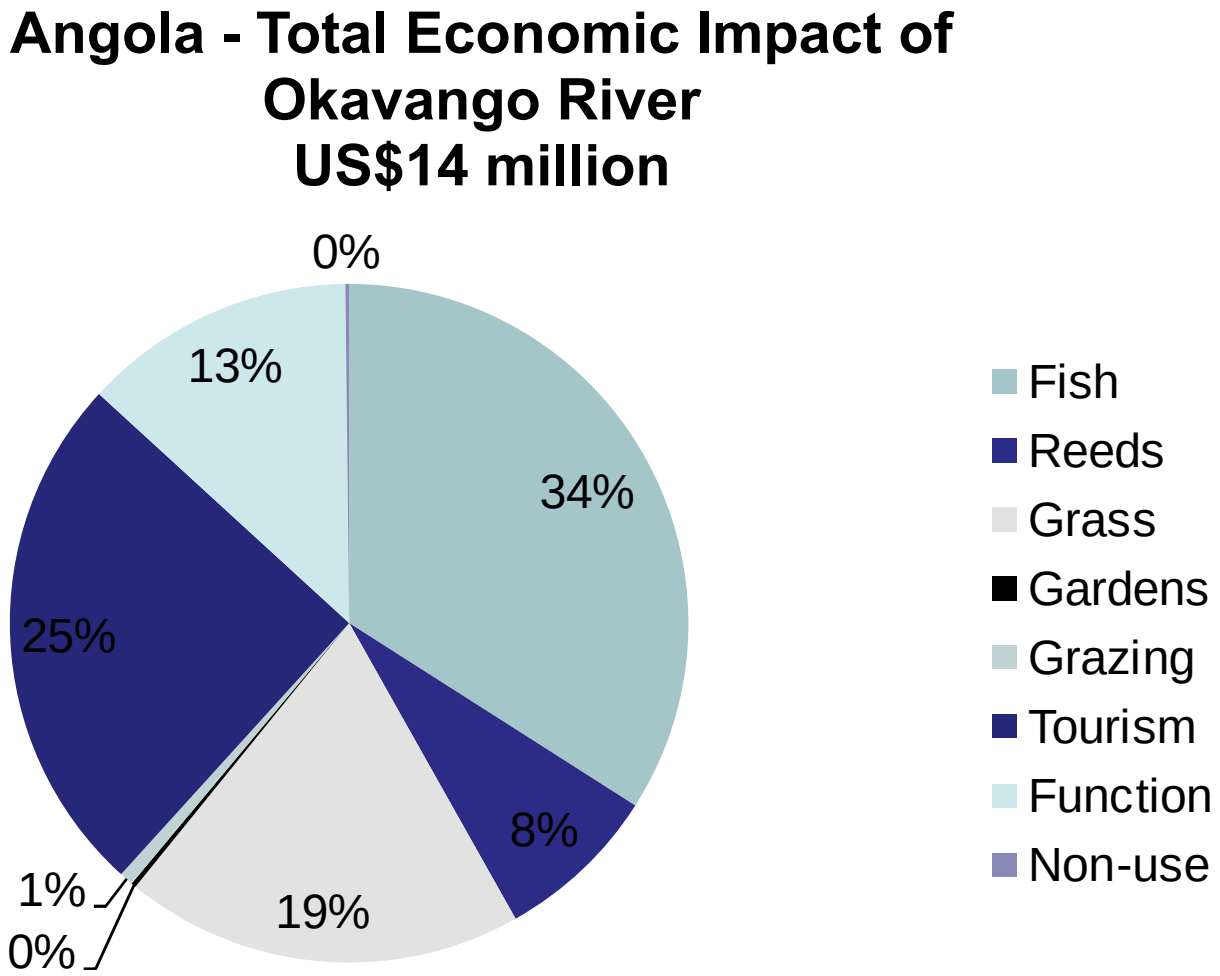
Botswana – Okavango river basin tourism and natural resource use
household net income



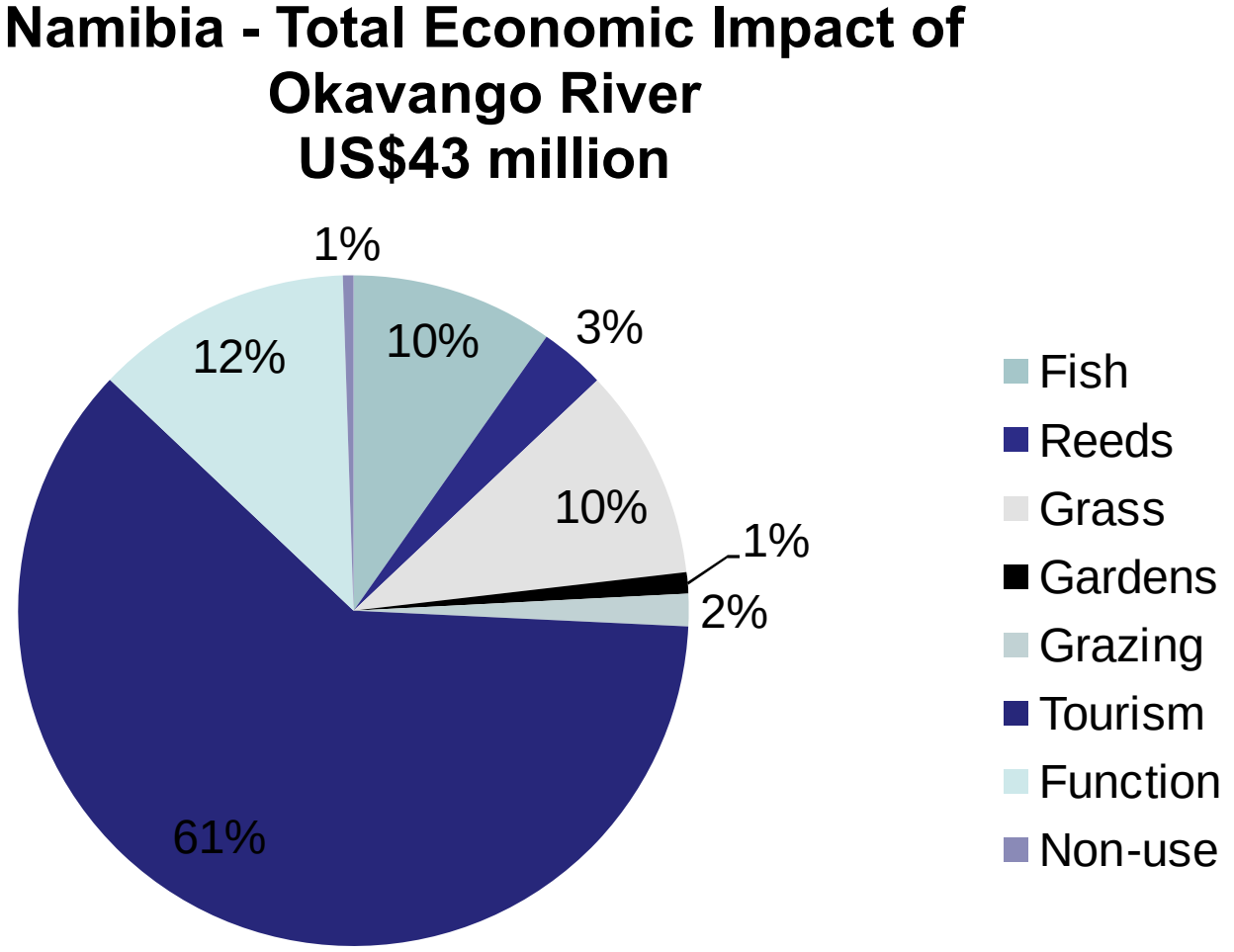
Values related to the economy in Angola, Namibia and Botswana



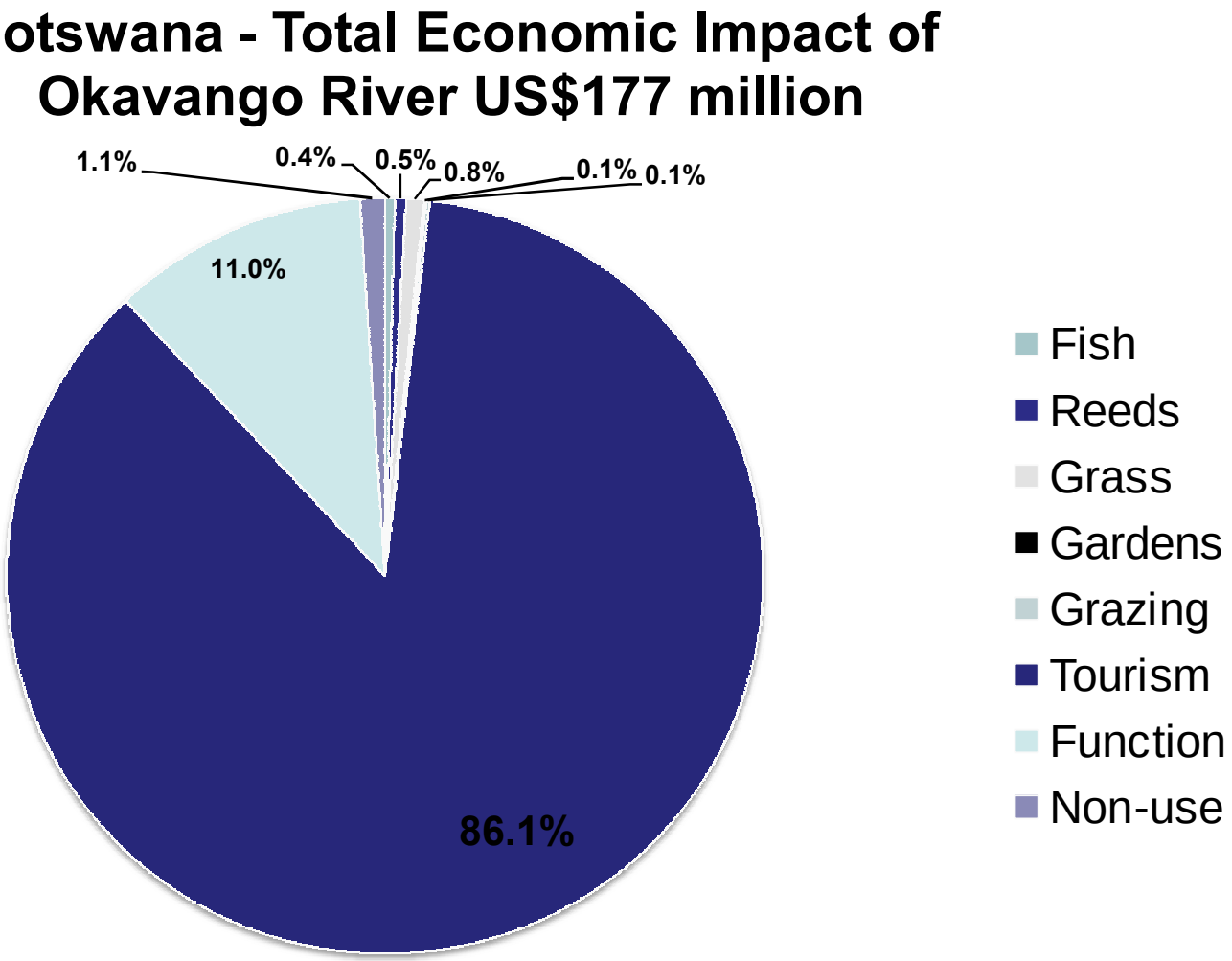
Angola – Economic value of river-based goods and services for Angola (partial)



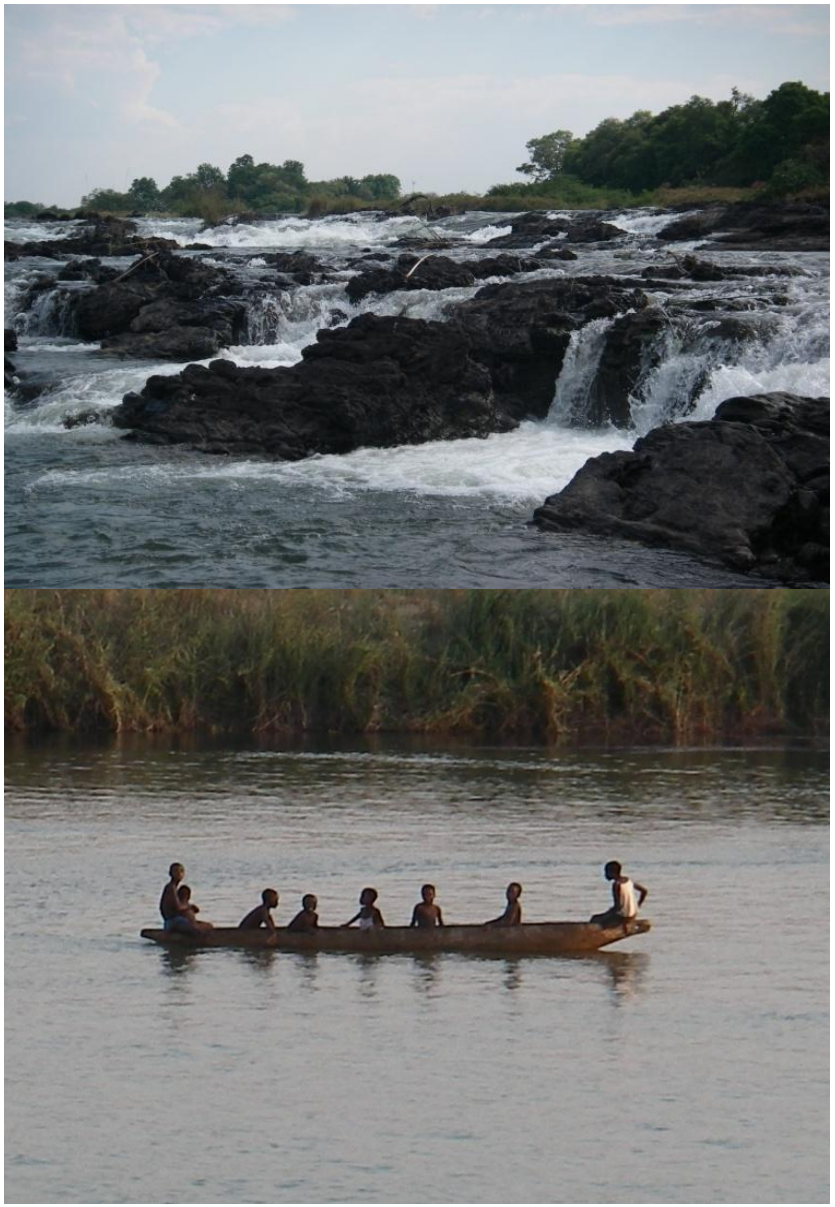
Namibia – Economic value of river-based goods and services for Namibia (partial)



Botswana – Economic value of river-based goods and services for Botswana (partial)

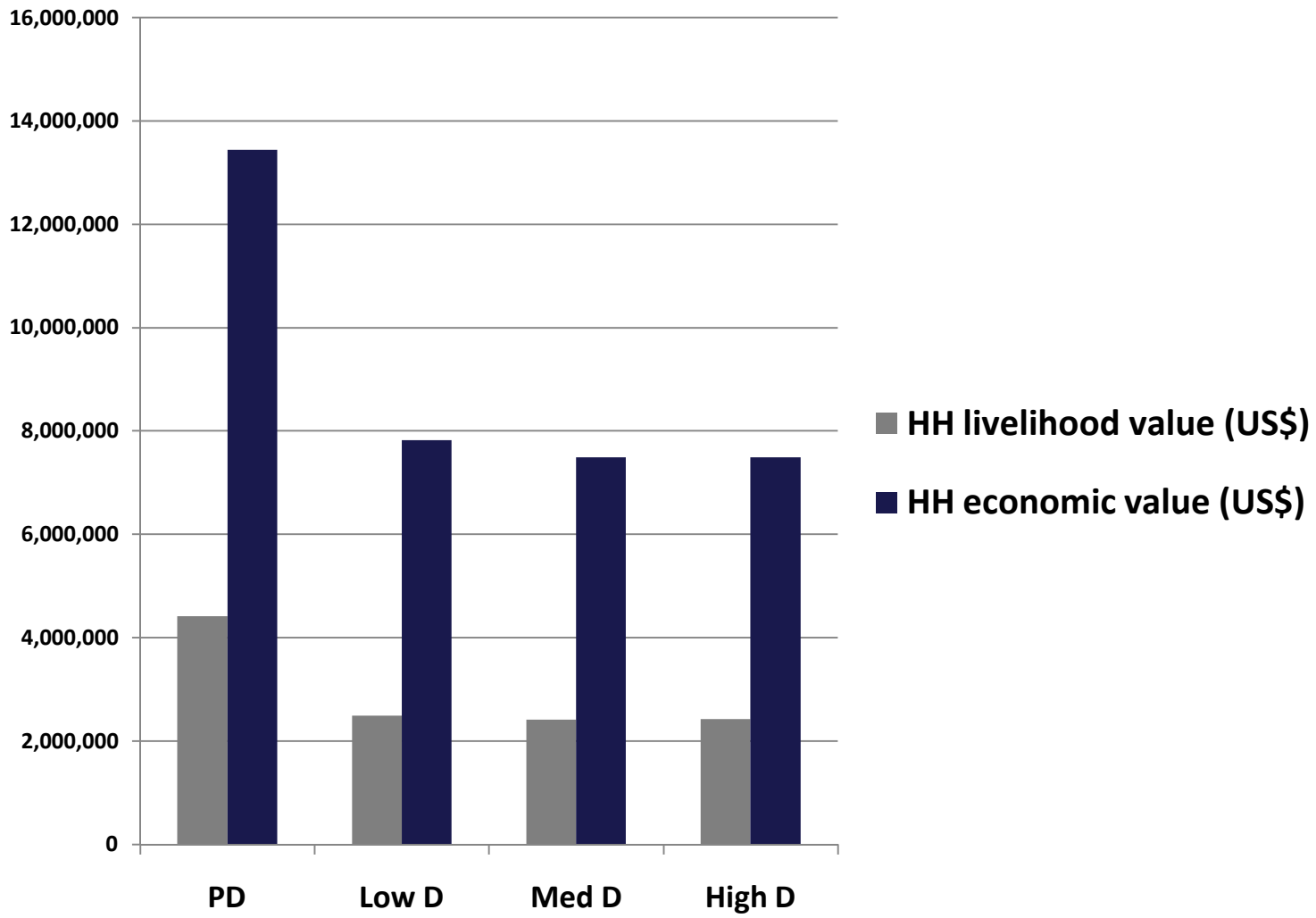


Water development scenarios

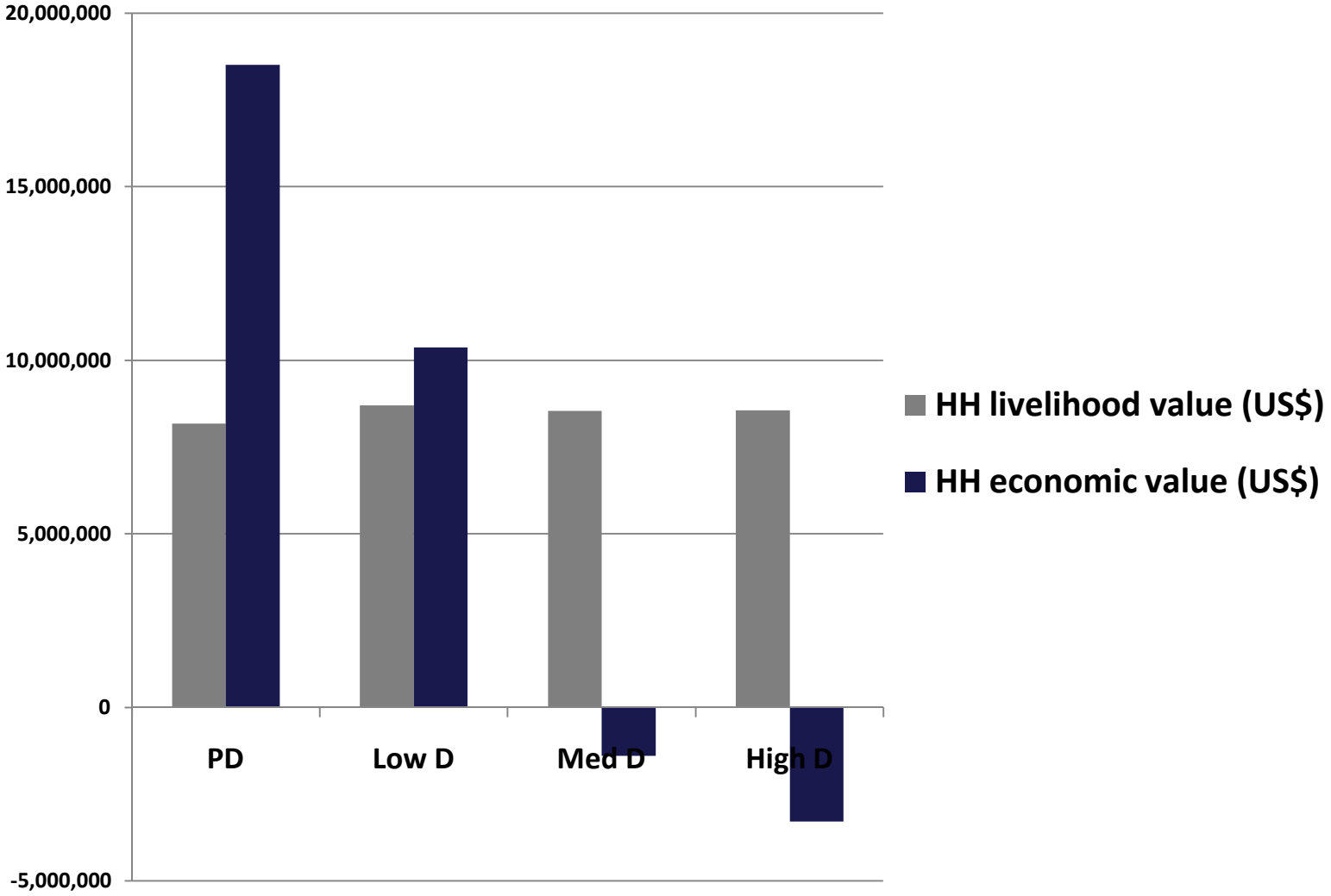


- **Present Day plus three Scenarios:**
- **Low development**
  - **Some irrigation and hydro-power**
- **Medium development**
  - **More irrigation, hydro-power and EWC extraction**
- **High Development**
  - **Maximum irrigation, hydro-power and EWC extraction**

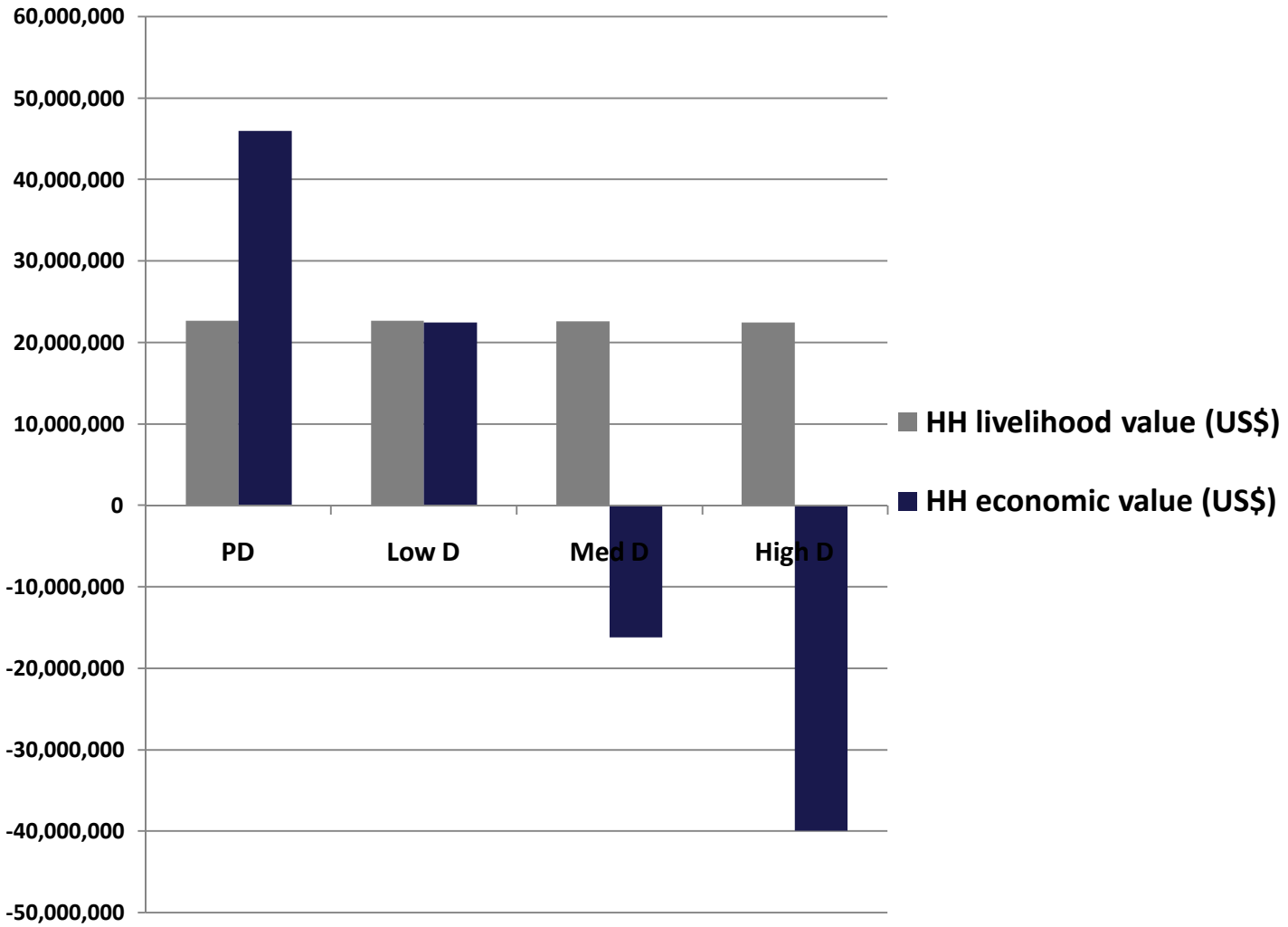
Angola – effect of scenarios on total livelihood values and direct household economic contribution from river tourism and natural resource use (US$)



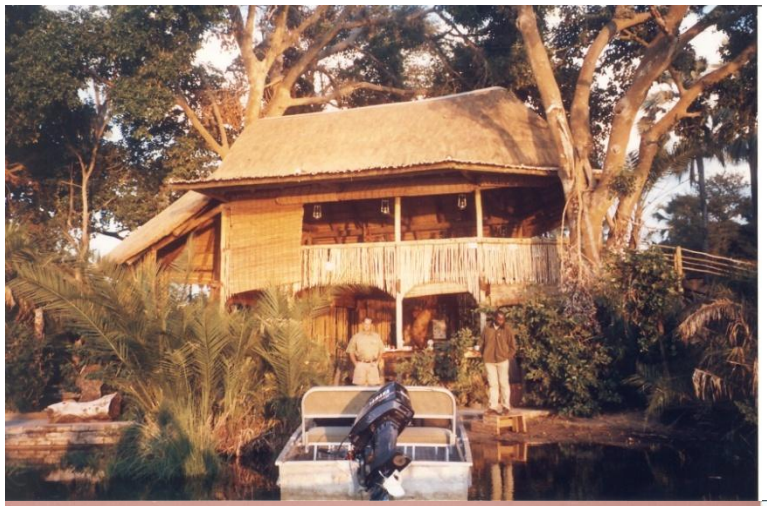
Namibia – effect of scenarios on total livelihood values and direct household economic contribution from river tourism and natural resource use (US$)



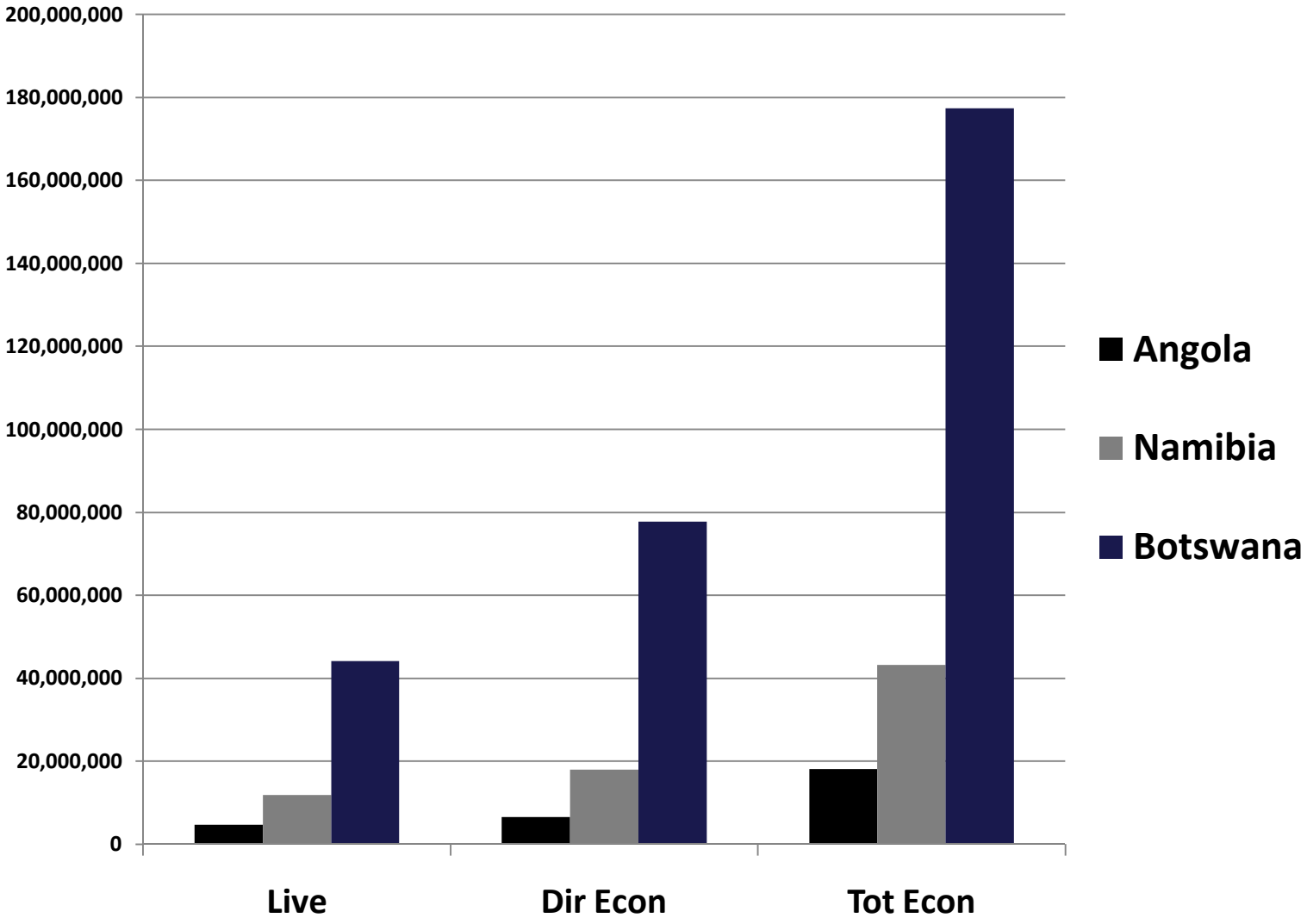
Botswana – effect of scenarios on total livelihood values and direct household economic contribution from river tourism and natural resource use (US$)



Various values for whole Okavango river basin



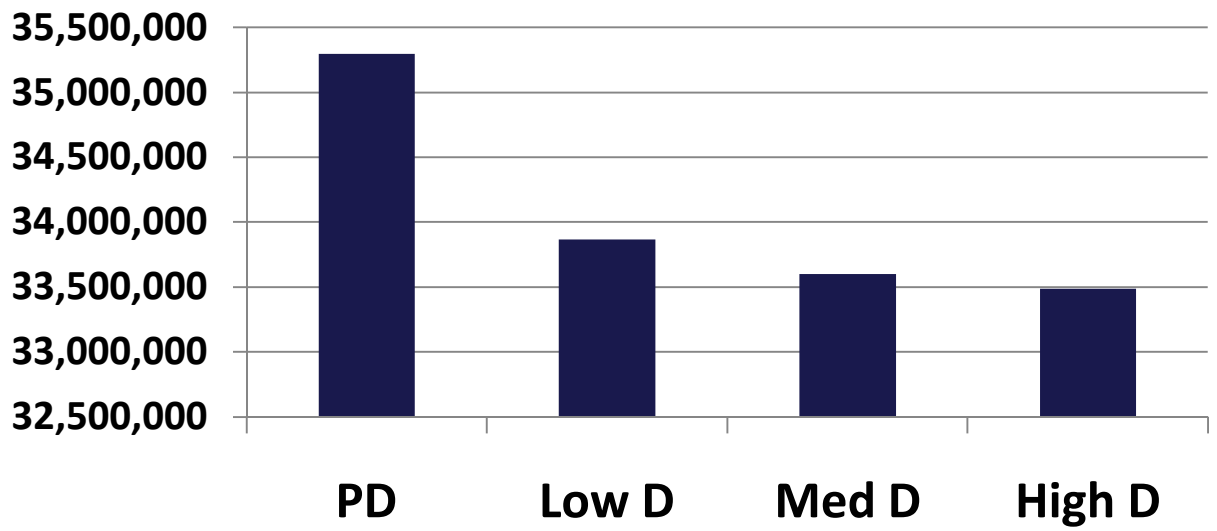
Okavango river basin: Current aggregate livelihood and economic values from river-based tourism and natural resource use



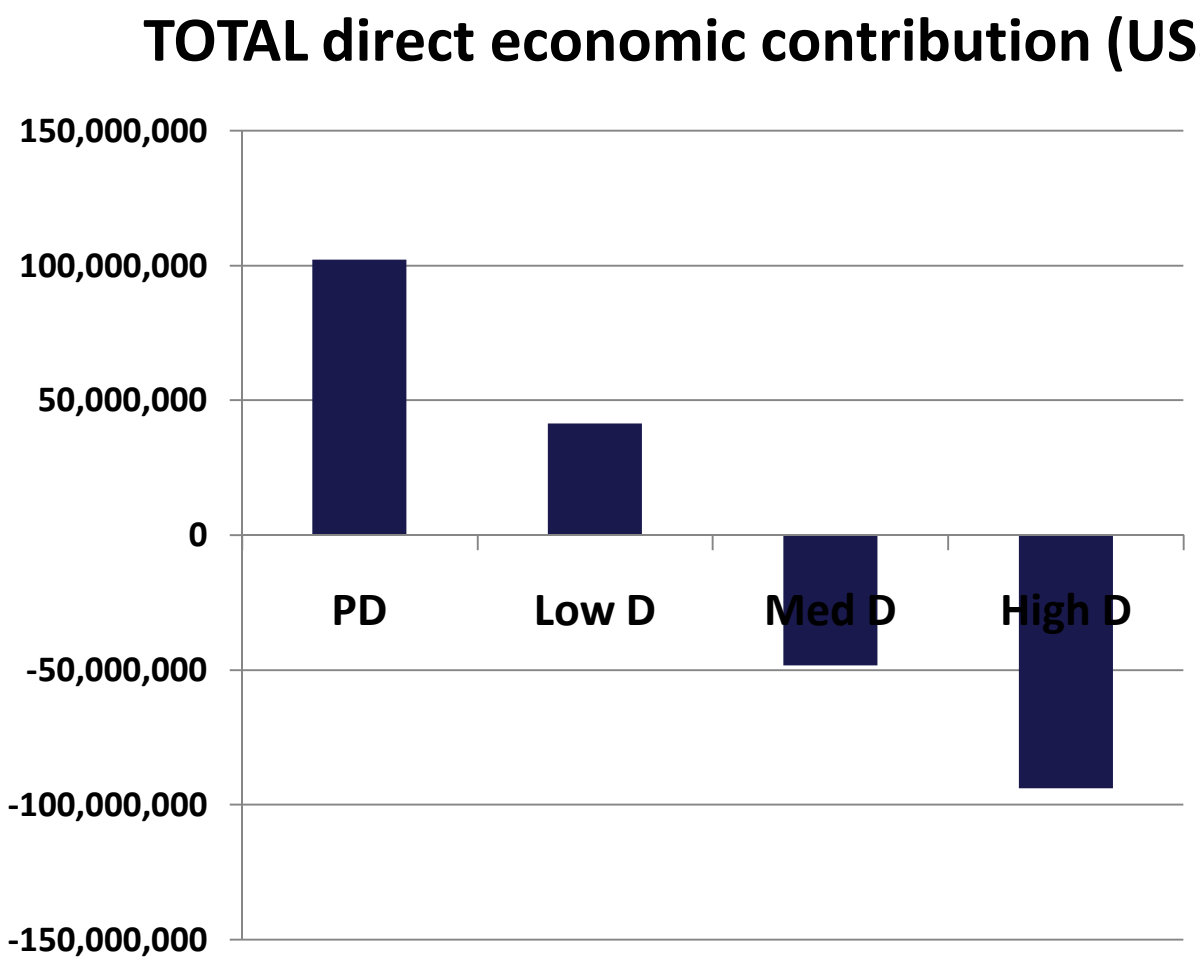
Household income away from river system: Forest use, dryland crops, woodland grazing, jobs,

Source	Country		
	Angola	Namibia	Botswana
River/wetland	19%	32%	45%
Upland	81%	68%	55%
Total	100%	100%	100%

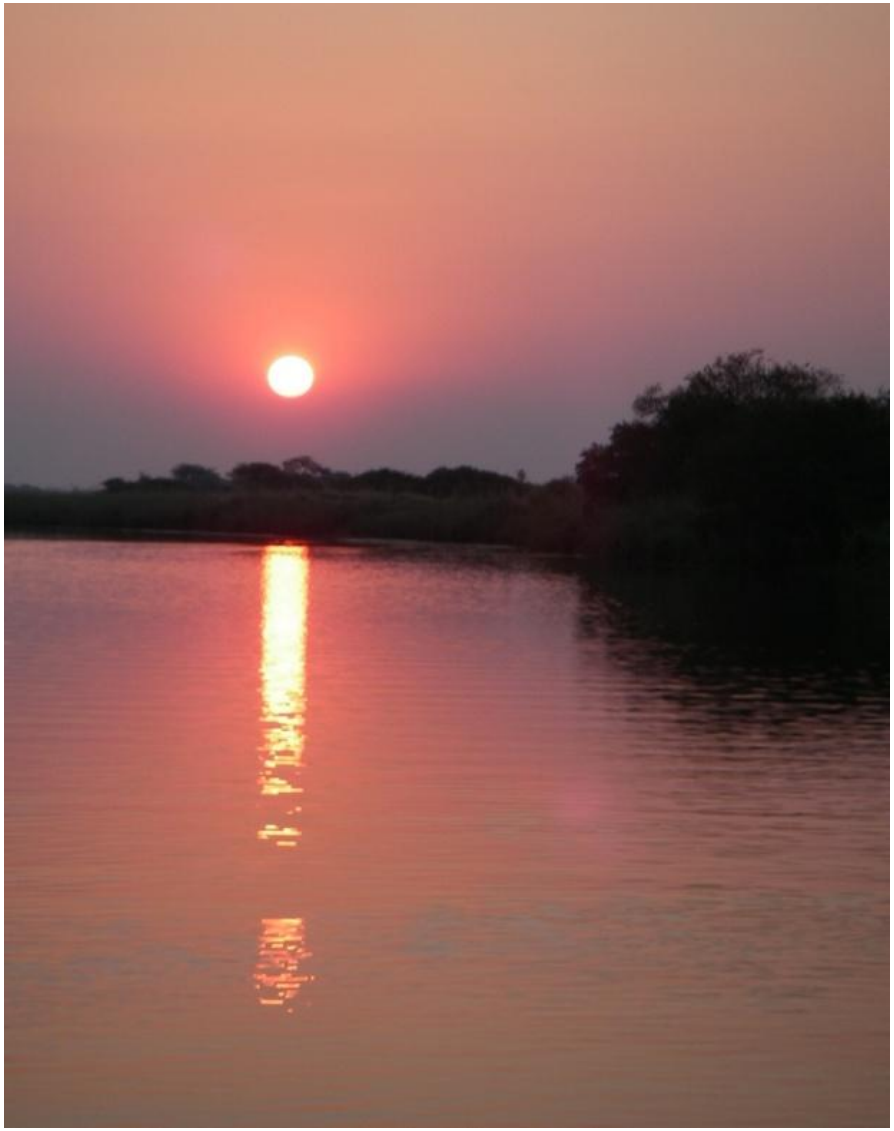
Effect of scenarios on net contribution of river to household livelihoods through tourism and natural resource use - Okavango River basin



Effect of scenarios on direct economic contribution of river through tourism and natural resource use - Okavango River basin



Conclusion - TDA issues



1. Okavango river contributes significantly to livelihoods and economy through tourism and natural resource use
2. Increasing levels of water development (as in scenarios) increases loss of these values
3. Economic losses key – they need to be compared with water development benefits
4. Work is ongoing...

Thank you!