WP7 SUSFISH
FISHERIES, HEALTH AND FOOD SECURITY

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Objective

Food supply and health care illustrated in appropriate case studies

WP 7 sites

Plan d'eau	Prov ou région	Bassin versant	Thèmes de recherche
Bam	Prov. Bam	Nakanbe	Politique, Sc. sociales, Santé
Ziga	Plat Centr	Nakanbe	Politique, biologie, santé
Sourou	B. Mouhoun	Sourou - Mhn	Biol., Politique, Sc. social., santé
Tiéfora	Comoé	Comoé	Politique, biologie, santé
Barrage Diébougou	Bougouriba	Bougouriba / MHN inf.	Biologie, santé
Boromo/ Mhn	Les Balé	Mhn inférieur	Biologie, santé
Niankorodougou	Léraba	Léraba / Comoé	Biologie, santé

Our team

Bobo Dioulasso polytechnic university
Faculty of medicine
Public-Health and Epidemiology department
Child and mother health-nutrition and survival unit

- Savadogo Léon, MD, head of department
- Ilboudo Bernard, MD, MPH, PhD student
- Meda Clément, MD, PhD
- Hervé Poda, MPH, PhD student
- Hien Alain, MSc (Nutrition)
- Kinda Maurice, MSc (Economy)
- Achille Ouédraogo, Susfish master student

What have been done in this WP

1. Fish consumption survey (360 households)
2. Contribution of fish in poor household diet calories and proteins
3. Fishermen health assessment and their household: data base entry for analysis (in six sites)
4. Microbiological and parasitological quality of consumed fishes in BK: master thesis (on going Ouédraogo Achille)

Next steps

1. Achieve study on microbiological and parasitological quality of consumed fishes in BK: master thesis (on going Ouédraogo Achille)
2. Conduct an evaluation of nutritional value of fish (by species) in Burkina Faso to complete BF alimentary table : cal, protein, micronutrients, in collaboration with LNSP and MoH (nutrition direction) and other WP
3. Publications (03 papers) and at the end (+ 02 papers)

Contribution of fish intake in improving food and nutrition security

1. Food and nutrition security indicators

Undernourishment :

Proportion of the population estimated to be at risk of caloric inadequacy.

This is the traditional FAO hunger indicator,

adopted as official Millenium Development Goal indicator for goal 1, target 1.9.

Table 1: Prevalence of undernourishment (%)

	2009-11	2010-12
World	12,6	12,5
Developing countries	**15,1**	**14,9**
Africa	**22,7**	**22,9**
North Africa	**< 5**	**< 5**
Sub Saharan Africa	**26,6**	**26,8**
Benin	8,7	8,1
Burkina Faso	**24,5**	**25,9**
Côte d'Ivoire	20,2	21,4
Ghana	< 5	< 5
Mali	8,0	7,9
Senegal	20,4	20,5
Togo	17,3	16,5
Asia	**14,2**	**13,9**
Latin America and the Caribbean	**8,4**	**8,3**
Oceania	**11,9**	**12,1**
Developed countries	**< 5**	**< 5**

Depth of the food deficit (kcal/caput/day) :

The depth of the food deficit indicates how many calories would be needed to lift the undernourished from their status, everything else being constant.

Estimated number of people at risk of undernourishment.

It is calculated by applying the estimated prevalence of undernourishment to the total population

Table 2: Depth of the food deficit (kcal/caput/day)

	2009-11	2010-12
World	**95**	**94**
Developing countries	**114**	**113**
Africa	**173**	**175**
North Africa	**17**	**17**
Sub Saharan Africa	**203**	**205**
Burkina Faso	**172**	**185**
Côte d'Ivoire	130	139
Ghana	23	19
Niger	67	68
Senegal	132	134
Asia	**107**	**104**
Latin America and the Caribbean	**60**	**59**
Oceania	**73**	**74**
Developed countries	**9**	**9**

Number of people undernourished :

Estimated number of people at risk of undernourishment.

It is calculated by applying the estimated prevalence of undernourishment to the total population.

Table 3: Number of people undernourished (millions)

	2009-11	2010-12
World	**869**	**868**
Developing countries	**852**	**852**
Africa	**231**	**239**
North Africa	**4**	**4**
Sub Saharan Africa	**227**	**234**
Burkina Faso	4	4
Côte d'Ivoire	4	4
Ghana	1	1
Niger	2	2
Senegal	3	3
Asia	**571**	**563**
Latin America and the Caribbean	**49**	**49**
Oceania	**1**	**1**
Developed countries	**16**	**17**

2. Determinants of nutritional status

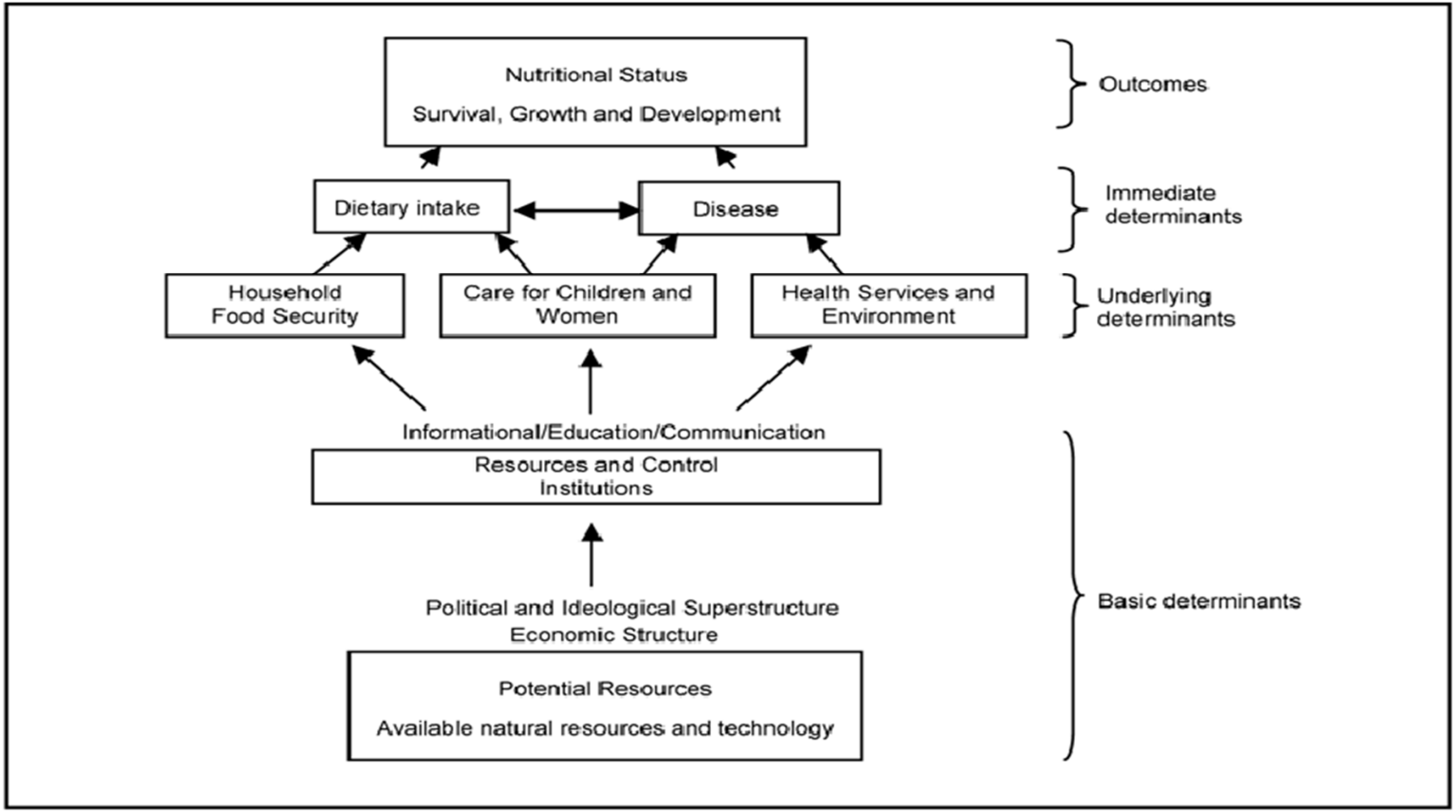


Figure 1: Determinants of nutritional status

Source: UNICEF (1990)

3. Roles of fish-related activities and interventions in improving nutritional status

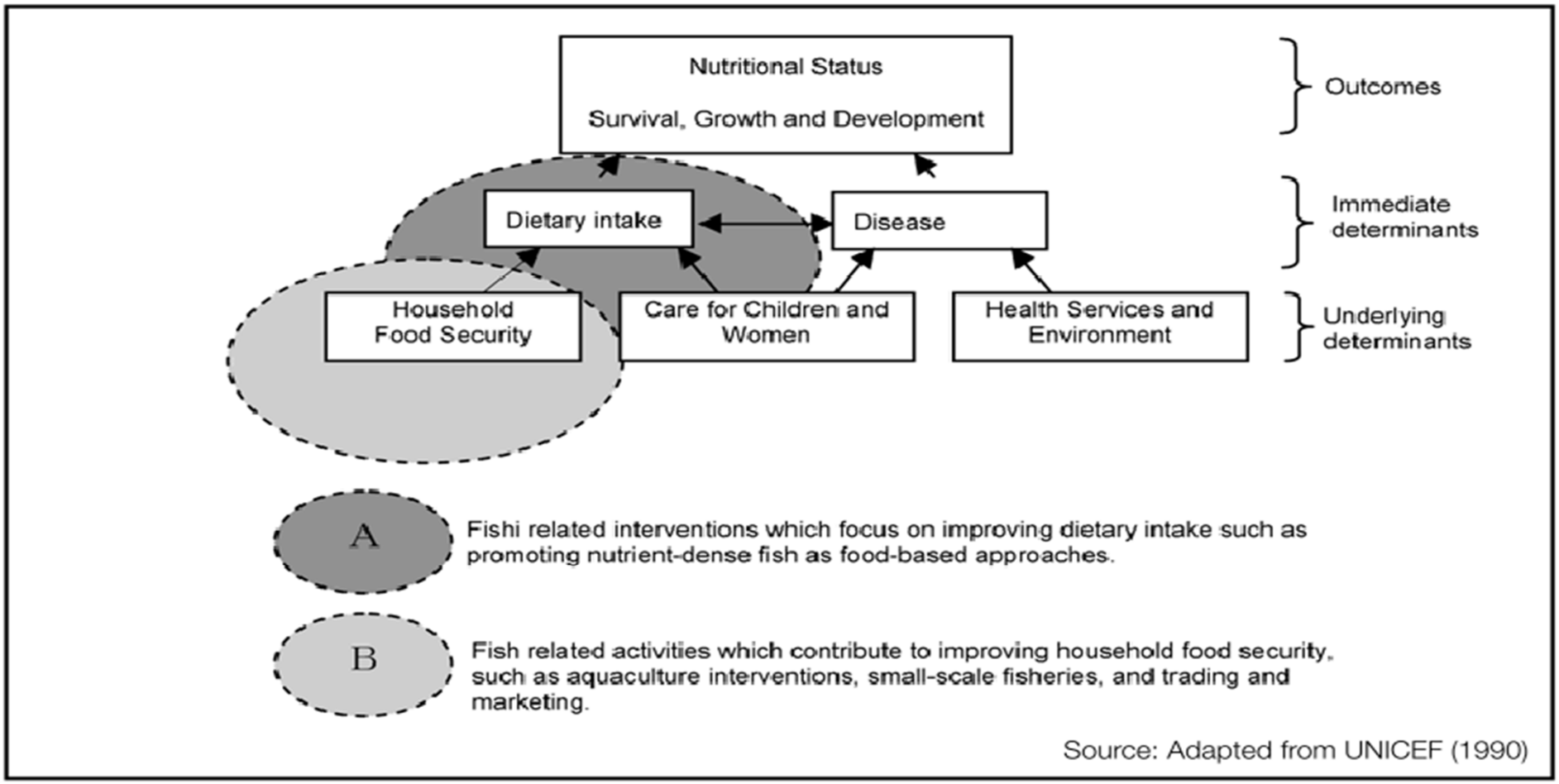


Figure 2: The roles of fish-related activities and interventions in improving nutritional status

4. Fish contribution on household food security and nutrition in Burkina Faso

Survey in 360 household:

- 96.6% of surveyed households consume fish
- for 67% of households fish is part of the constituents of their daily diet as animal protein source

4. Fish contribution on household food security and nutrition in Burkina Faso

We assessed the contribution of fish in poor household diet calories and proteins:

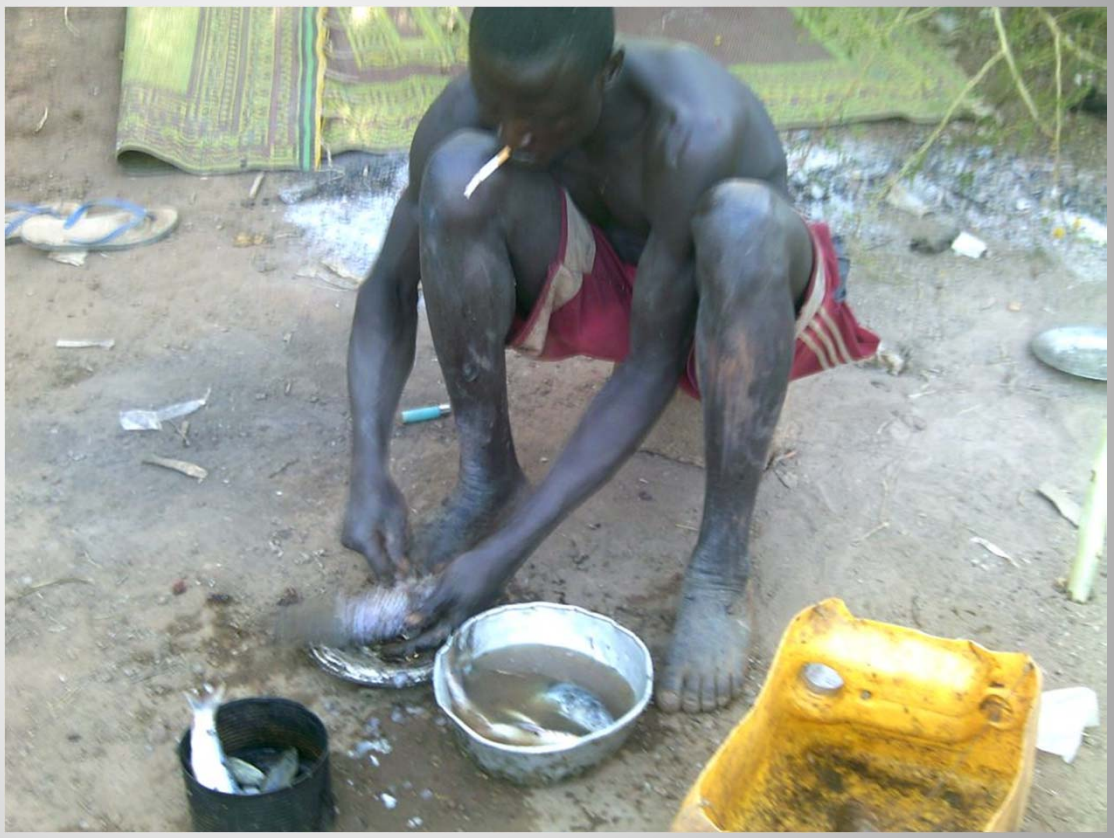
Rice + vegetable's sauce	Masse	Kcal	Protein (g)
All diet	4558	9065	227.9
Contribution of **Fish**	272	742	50.9
		8%	22,3%
Vegetable's sauce only			
Sauce	2611	9853	91.6
Contribution of **Fish**	272	742	50.9
		31,5%	55,6%

	Masse	Kcal	Protein (g)
Kapok Sauce	2495	4409,5	151,1
Contribution of **Fish**	568	1567,2	118,4
		35,5%	**78,3%**

Rice + "*Fakoi*" sauce	Masse	Kcal	Protein (g)
All diet	2106	5751	177,8
Contribution of Fish	268	731,1	50,1
		12,7%	28,2%
"*Fakoi*" sauce only			
Sauce	1106	2306,2	107,8
Contribution of Fish	268	731,1	50,1
		31,7%	46,5%

5. Fish contribution in fishermen home economy

We assessed the contribution of fish in fishermen economy



Method – Sample size and sites

- observation and interview of 344 fishermen
- Sample size/site

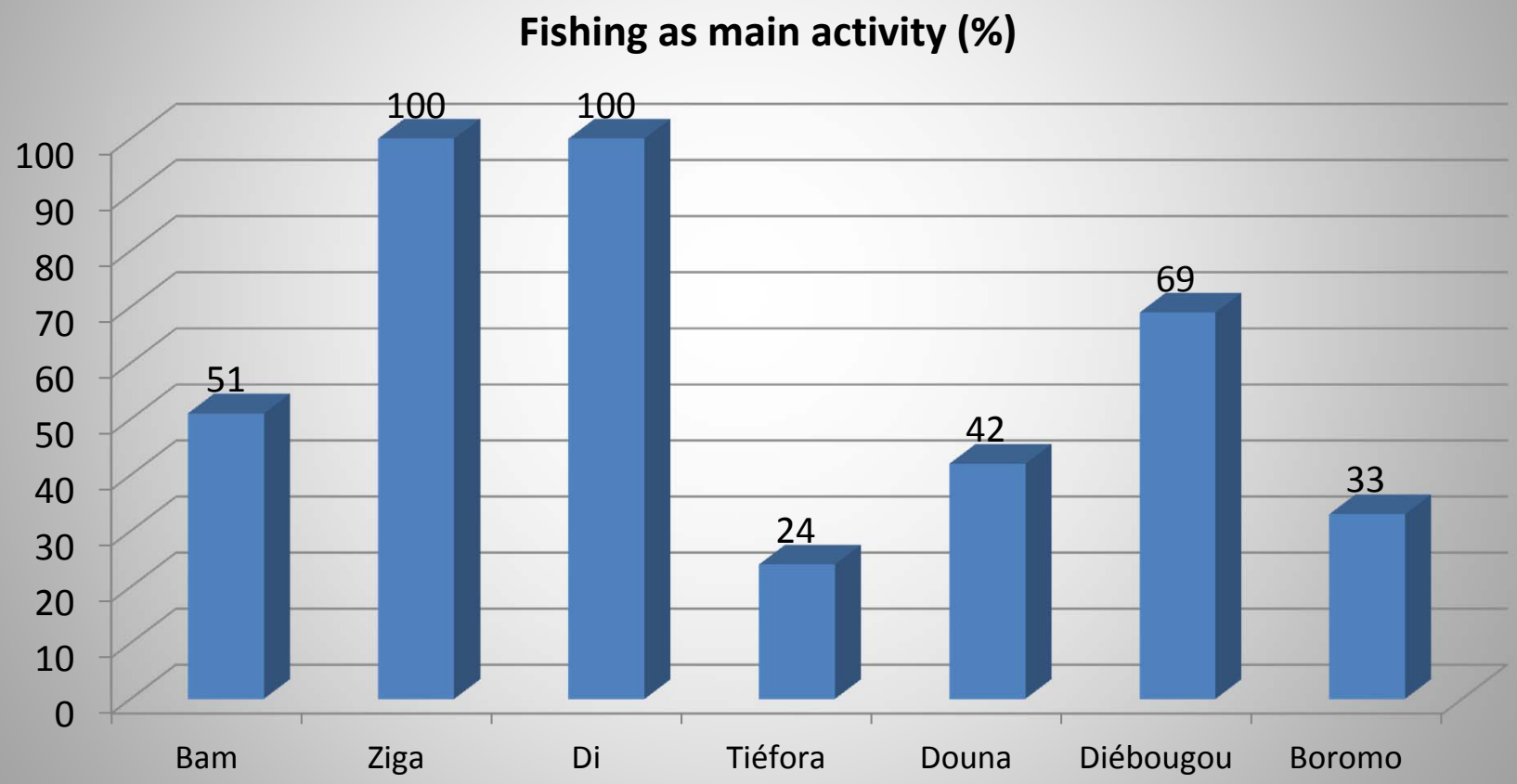
Rivers	Sites	Number of fishermen
Nakambé	Bam	55
	Ziga	53
Sourou	Di	56
Comoé	Tiéfora	50
	Douna	50
Bougouriba	Diébougou	29
Mouhoun	Boromo	51

Table 1: fishermen socio-demographics characteristics

Sites	Age (Y) Means	% educated*	% married	% with children	Children number Means
Bam	42.5	74.5	88.9	90.6	4
Ziga	29.3	11.5	78.8	82	3
Di	32.4	8.9	67.9	72.2	6
Tiéfora	34.9	12	74	77.1	6
Douna	45.1	12	94	96	6
Diébougou	34.9	27.6	82.8	81.5	5
Boromo	32.5	17.6	98	83.7	4

* Level reached: primary school

Fig 1: Fishing as main activity



Number of day for fishing / week

Table 2 : Number of day for fishing / week (% of fishermen)

	% of fishermen						
	Bam	Ziga	Di	Tiéfora	Douna	Diébougou	Boromo
7d/7	42.6	37.7	83.9	12.5	57.1	78.6	62.7
<3d/7	13	0	0	29.2	8.2	3.6	3.9
3-4 d/7	20.4	9.5	3.6	52.1	20.4	3.6	15.7
5-6d/7	24	52.8	12.5	6.3	14.3	14.3	17.6

Sale of Fish

Table 3 : who sale, where and to whom ?

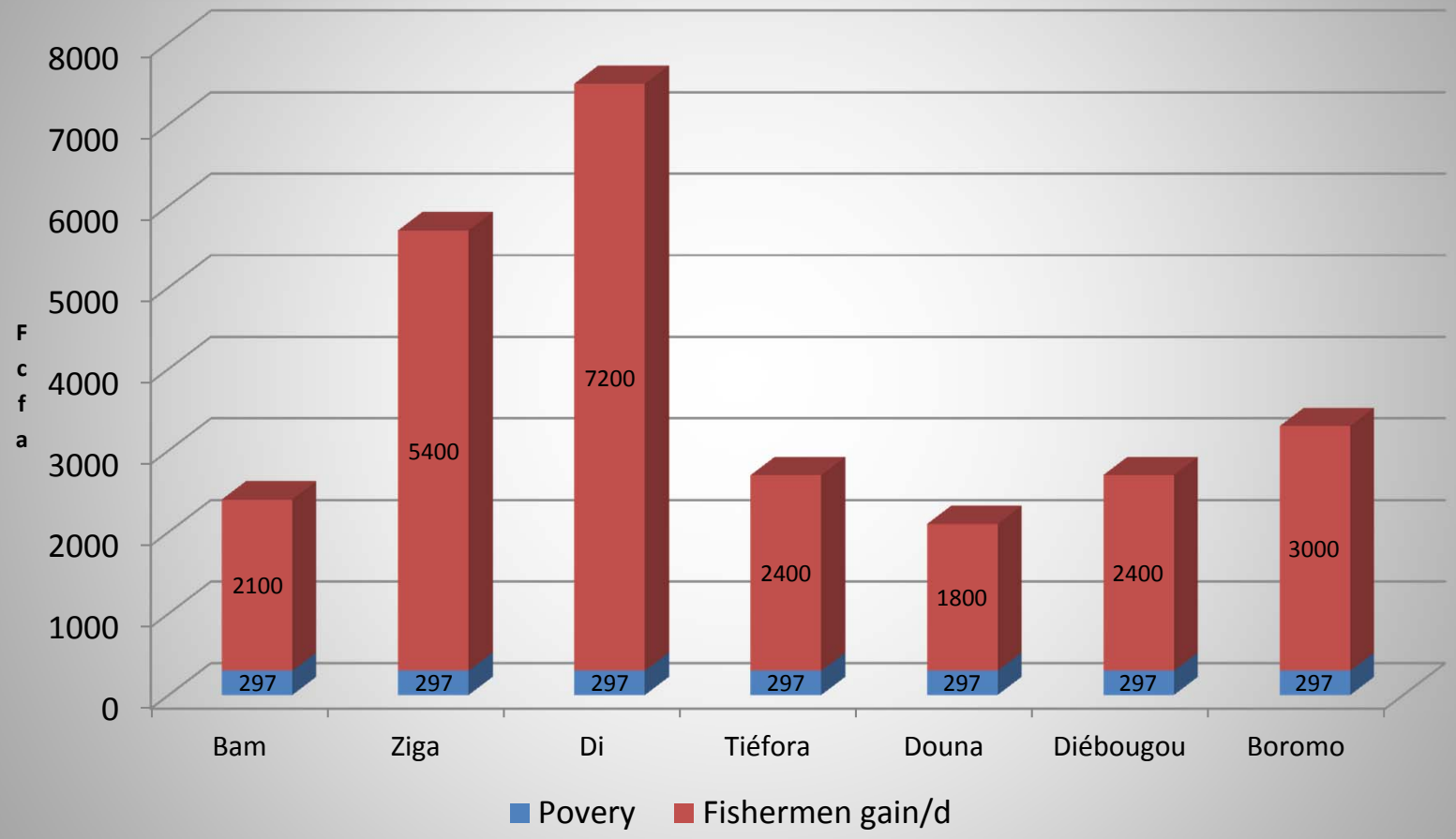
	% of fishermen						
	Bam	Ziga	Di	Tiéfora	Douna	Diébougou	Boromo
Who sale: **Himself**	69.1	98.1	16.1	90	52	75	98
Where: **near of the river**	61.8	98	12.5	70	6	48.1	21.6
To whom: **Retailer**	78.2	100	76.8	95.9	54	88.9	98

Sale of Fish

Table 4 : Estimated quantity of fish (kg/d) and gain after sale (Fcfa/d)

	Bam	Ziga	Di	Tiéfora	Douna	Diébougou	Boromo
Estimated quantity of fish (kg/d)	3,5	9	12	4	3	4	5
Gain after sale/d (Fcfa)	2100	5400	7200	2400	1800	2400	3000
Euros	3	8	11	4	3	4	5
Poverty level/j (BKF)	290	290	290	290	290	290	290

Reference to poverty level in Burkina Faso (108454 cfa/y, 297 Fcfa/day = 0.45 euros/day)



	expenditure headings with fish sale gain (% fishermen)						
	Bam	Ziga	Di	Tiefora	Douna	Diébougou	Boromo
Household Food	87.3	94.3	57.1	70	90	92.9	98
School	49.1	66	37.5	50	46	78.6	37.3
Health	70.9	88.7	91.1	84	70	82.1	62.7
For fishing	27.3	86.8	94.6	46	44	50	94.1
others	16.4	9.4	17.6	6	40	3.6	3.9

Thank you