

Investment Impact Evaluation: A World Bank project in Liberia

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Objective of Fisheries Projects: ----To Achieve **Triple Bottom Line**

ECONOMIC SUSTAINABILITY



ECOLOGICAL SUSTAINABILITY



COMMUNITY SUSTAINABILITY



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Introduction

- * A number of fisheries development projects are instigated every year, recognizing the importance of fisheries and aquaculture in coastal communities
- * In this study we look at a World Bank project in Liberia, which was a part of the West Africa Regional Fishery Program
- * Main objective of the project:
 - * To strengthen the capacity of Liberia to govern and manage targeted small-scale fisheries, reduce illegal fishing and increase local value added
- * While wide enough in itself, the real objective is to improve livelihoods and create economic opportunities

Improving Fisheries Management Systems

- Do we know what really works?
- Where should we invest?

- * Better infrastructure?
- * More data and stock assessment?
- * More stakeholder meetings?
- * Co-Management?
- * Secure fishing rights?
- * More education?
- * More enforcement?



Challenges of Fisheries Development Projects

- * No data or lots of missing data
- * Lack of economic and social indicators
- * Lack of evidence on the policy reform and investment priorities
- * Lack of measurement of the fishery project progress and impact on all dimensions
- * **In sum, it is very hard to evaluate a project for impact**
 - * Too often, only the process or input is evaluated

The Fisheries Performance Indicators do not provide a complete answer. However, they give a tool to measure impacts, including impacts that cannot be measured with NPV



Sample Metric 1: More Quantitative

Annual Landings Volatility: Ratio of the standard deviation of the first differences of annual total landings to the mean landings over the past 10 years

Score	Description
5	0.14 or less
4	0.15 ~ 0.21
3	0.22 ~ 0.39
2	0.40 ~ 0.99
1	1 or greater

Note: Pilot study boundaries were established by calculating the score for each country-fish category (finfish, shellfish, and crustaceans only) in FishStat (FAO), then determining the quintile values.

Sample Metric 2: More Subjective

Social Standing of Captains

Score	Description
5	Among the most respected in the community, comparable with civic and religious leaders or educated professionals
4	Comparable to business managers and white collar jobs
3	Comparable to skilled labor jobs
2	Comparable to unskilled labor or service jobs
1	Among the least respected, such as illegal labor, slaves or indentured servants

- 1-5 categories make accurate scoring possible in the absence of precise data or great effort

Quality of the Scores

Measure	Score System	Score	Quality	Issues and Notes	Data Source
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- **A: Highly Confident**
- **B: Reasonably confident**
- **C: Not sure, just a guess**



Repeated use of FPIs is a tool to measure project impact

- * While the initial main objective of the FPIs was to compare different fisheries, repeated scoring was planned to measure progress
- * This can also be used for a specific projects
 - * Score the targeted fishery at the start of the project
 - * Rescore it at completion, and possibly some year after
 - * Scoring comparable fisheries at the same time provide strong controls
 - * The FPI database can also be used

Case: Liberia

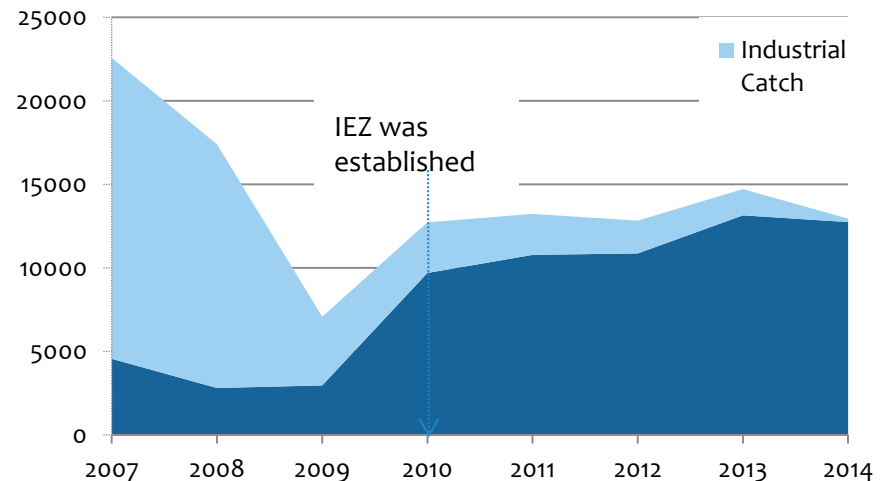
- * Liberia has approximately 33,000 fishers along a 570km coast line (Sherif, 2014)
- * Most fishers operate small wooden dug-out non-motorized canoes called Kru canoes.
 - * The canoes are typically less than 7 m and Kru fishermen use purse seines, beach seines, gillnets, long line, and hook and line to capture coastal shallow and deep-water demersal and small pelagics. There are about 3000 Kru canoes
- * There are also about 500 larger motorized vessels which are generally referred to as 'Fanti' boats
- * Distant water fishing fleets
- * Data collected at West Point near the capital Monrovia in 2013 and 2016

Case: Liberia

The Project supported

- Policy reform to set up 6 Mile Inshore Exclusive Zone (IEZ) for Artisanal fishermen
- Strengthening the Monitoring, Control, and Surveillance (MCS)
- Training local fishermen volunteers to patrol coastal areas to identify illegal fishing boats and use GPS-connected camera to take pictures and use as court evidence
- Developing Community Management Association (CMA)
- Hygiene and sanitary awareness and training

Annual Landing by Sector in Liberia from 2007-2014



Country Profile

LIBERIA

TABLE C.2. SUMMARY OF LIBERIA ARTISANAL FISHERY IN ROBERTSPORT AND SEMI-INDUSTRIAL FISHERY IN MARSHALL



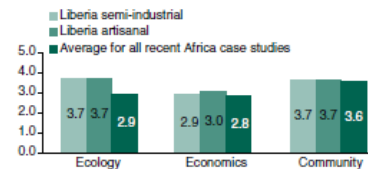
Fishery Type	Species	Gear	Characteristics	Management	Vessels
Artisanal (Kru)	<ul style="list-style-type: none"> Shallow and deep-water demersal Small pelagics Flying fish Barracuda Shark 	<ul style="list-style-type: none"> Cast nets Floating and bottom gillnets Hand lines Set hook and line 	<ul style="list-style-type: none"> Highly seasonal (mainly fish in dry season) Less mobile Local Liberians Processors predominantly smoke fish for local consumption 	<ul style="list-style-type: none"> Regulated open access Local fishing associations focus on equitable access to fish and safety at sea Separate fishing associations and sea chief for artisanal/semi-industrial West Africa Regional Fisheries Program (WARFP) is in the process of setting up a CMA in Robertport with plans to implement a Territorial Use Rights in Fisheries (TURF) 	Small dugout canoes with paddles or sails 
Semi-industrial (Fanti)	<ul style="list-style-type: none"> Primarily small pelagics Shallow and deep-water demersal Sailfish Shark 	<ul style="list-style-type: none"> Large ring nets Gillnets Hand lines 	<ul style="list-style-type: none"> Highly seasonal Highly mobile (migrate entire coastline) Harvesters of Ghanaian ancestry Processors predominantly smoke fish for local consumption 		Large planked canoes with outboard engines 

Photo credit: Paul Donovan.

Photo credit: Varasca, Panoramic.

FIGURE C.4. ECOLOGY, ECONOMICS, AND COMMUNITY SUSTAINABILITY FOR LIBERIA ARTISANAL FISHERY



RELATIVE STRENGTHS

Ecological indicators are above average.

- » Due to the implementation of a trawler spotter program, local experts consider the fish stock to be healthy as overfishing declines. There are few bycatch issues.
- » Recent efforts have led to a reduction in the number of industrial vessels and less illegal activity inside the Inshore Exclusion Zone (IEZ). Fishermen report that this has increased fish stocks and landings.

Community indicators are slightly above average.

- » Relative to their local communities, participants in the fishery are earning good livelihoods.
- » The semi-industrial fishery is predominantly people of Ghanaian ancestry who have been living in the local community for extended periods, but there are also a larger number of migratory harvesters in this fishery.
- » Although there is a level of mistrust and occasional conflict between the two fleets, there is

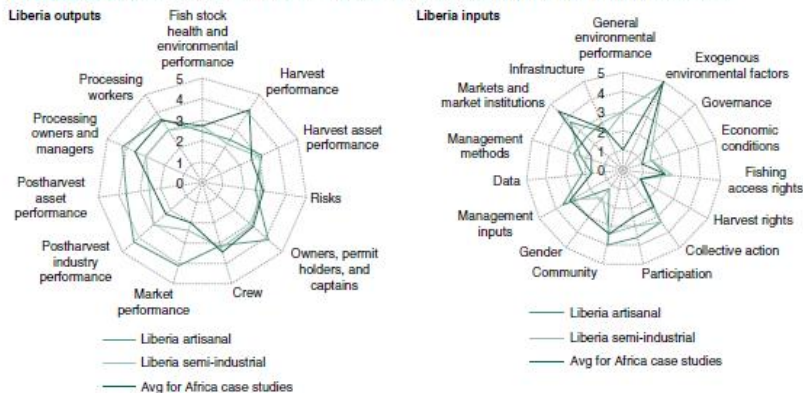
frequent cooperation between artisanal and semi-industrial harvesters (information sharing about fish location and spatial rules that regulate harvest technology).

RELATIVE WEAKNESSES

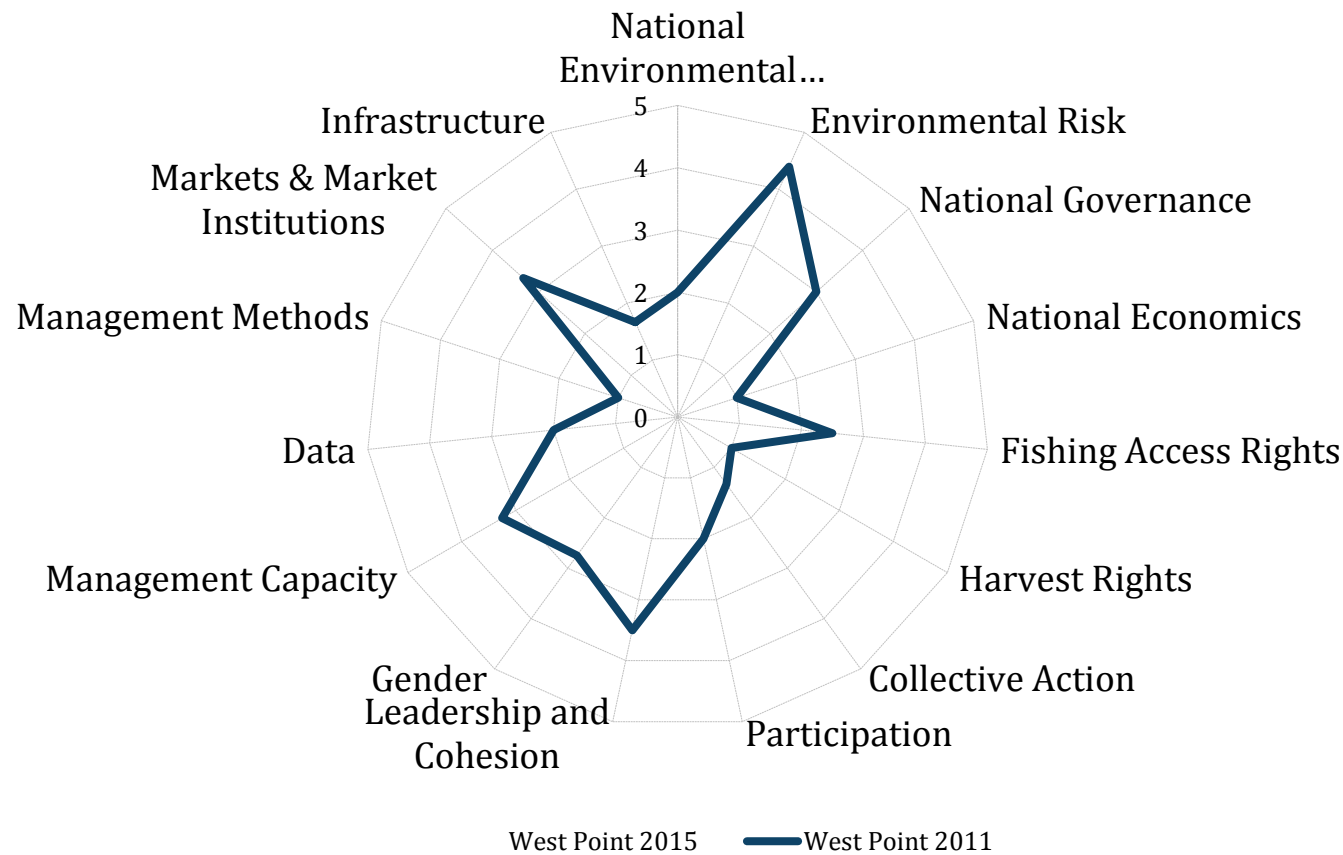
Economic indicators are only slightly above average.

- » Prices are reported to be generally increasing but show large seasonal variation due to changing availability of fish, which exposes the postharvest sector to market risk.
- » There is very little harvest that goes to international markets.
- » The landings pricing system is not competitive—there are a large number of first buyers/fishmongers but harvesters tend to sell only to one buyer (often their wives) and frequently have credit relationships with the buyer. It is difficult to gain access to other credit.
- » First buyers tend to try to associate both to influence prices and to exclude outside competition, as securing supplies is an important factor.
- » Harvest safety is an important concern, particularly in the artisanal fishery.

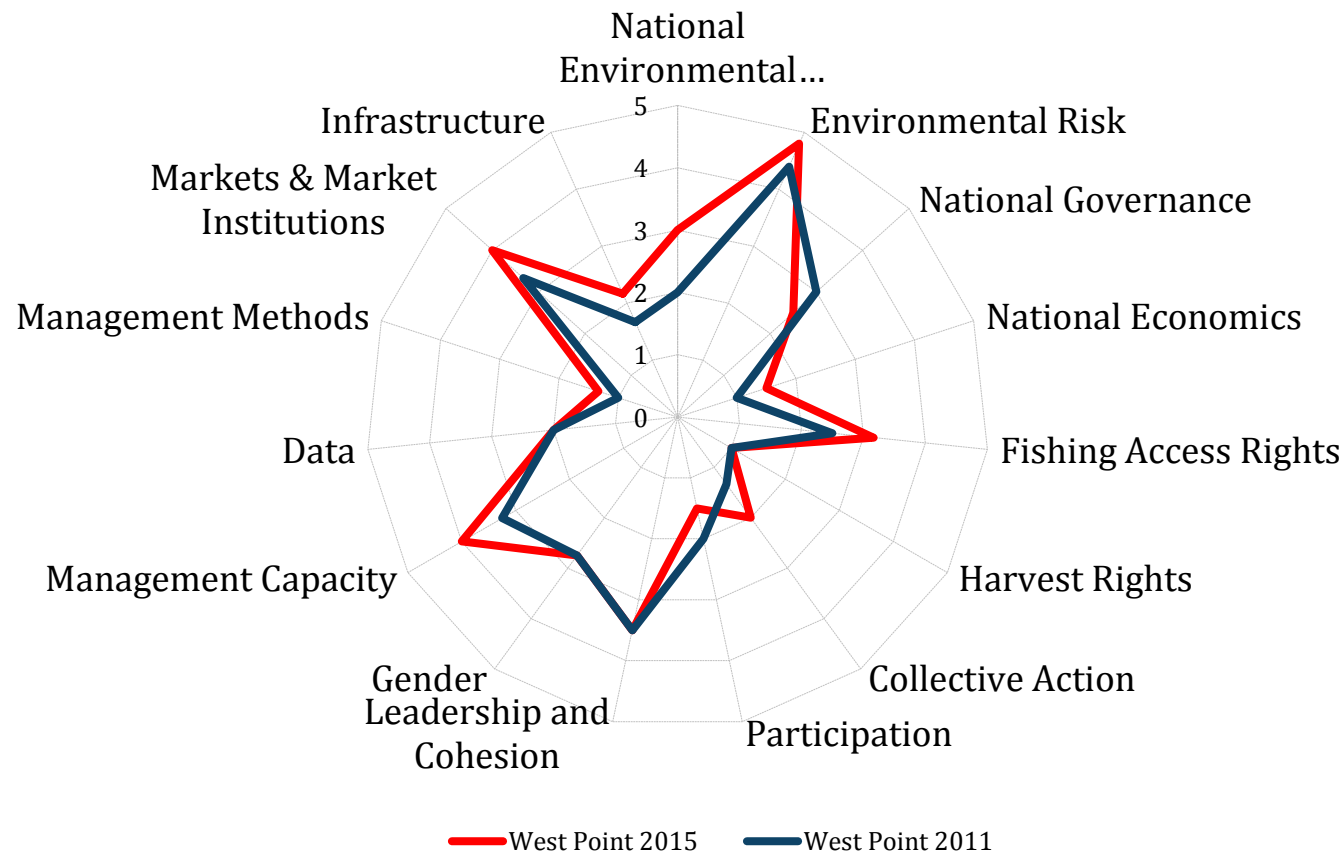
FIGURE C.3. SUMMARY OF LIBERIA CASE STUDY OUTPUT AND INPUT SCORES



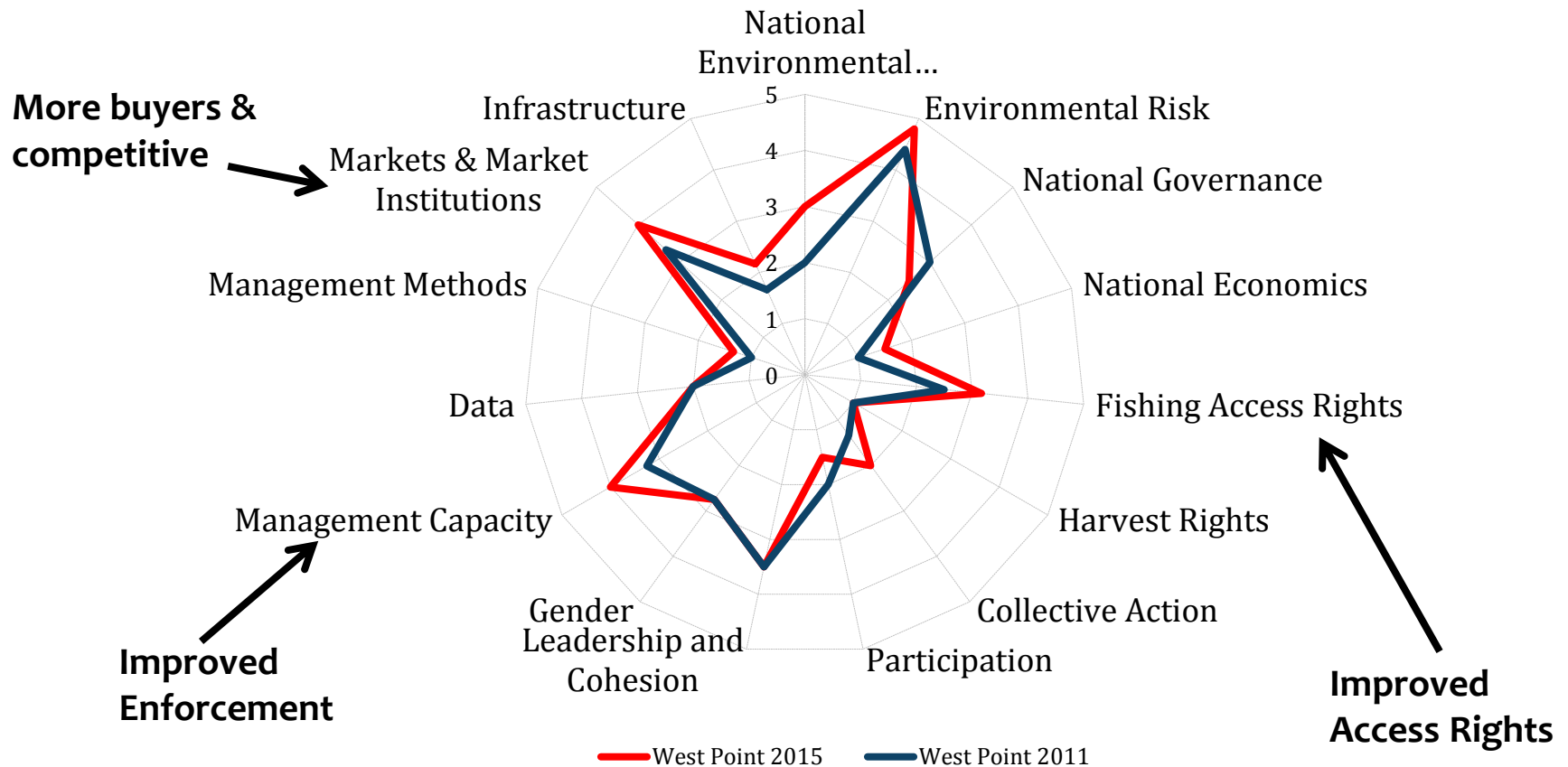
Applying FPIs to Liberia Artisanal Fisheries in West Point in 2011 and 2015: Inputs



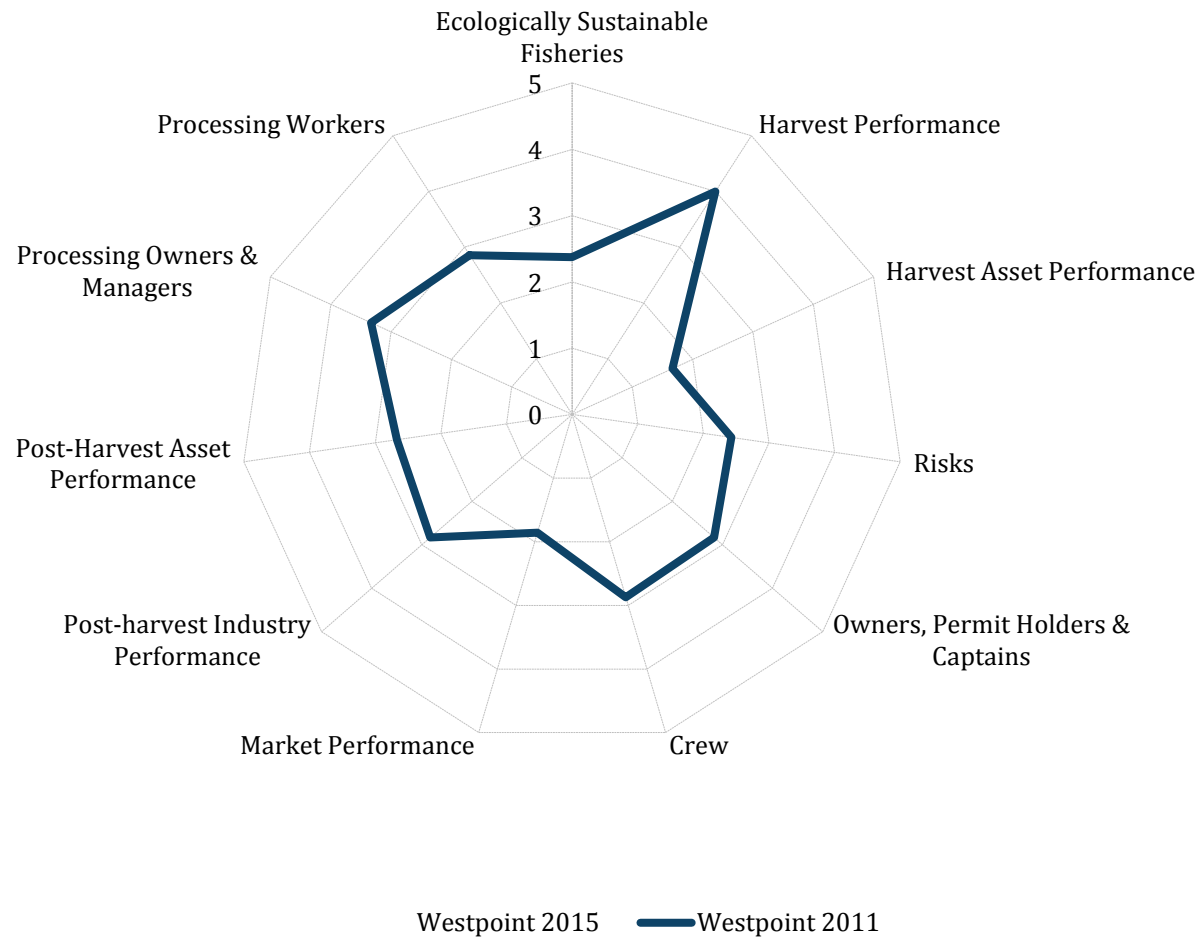
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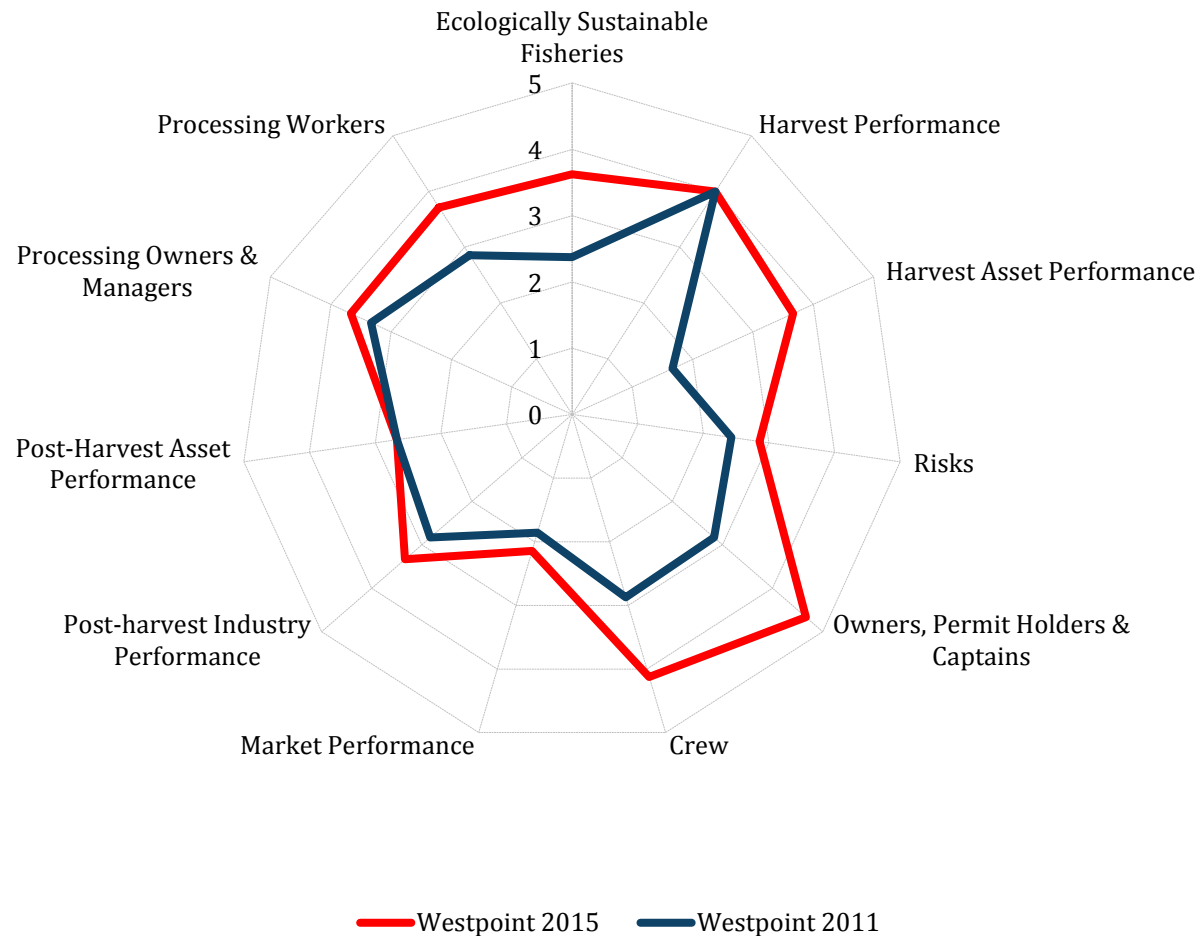
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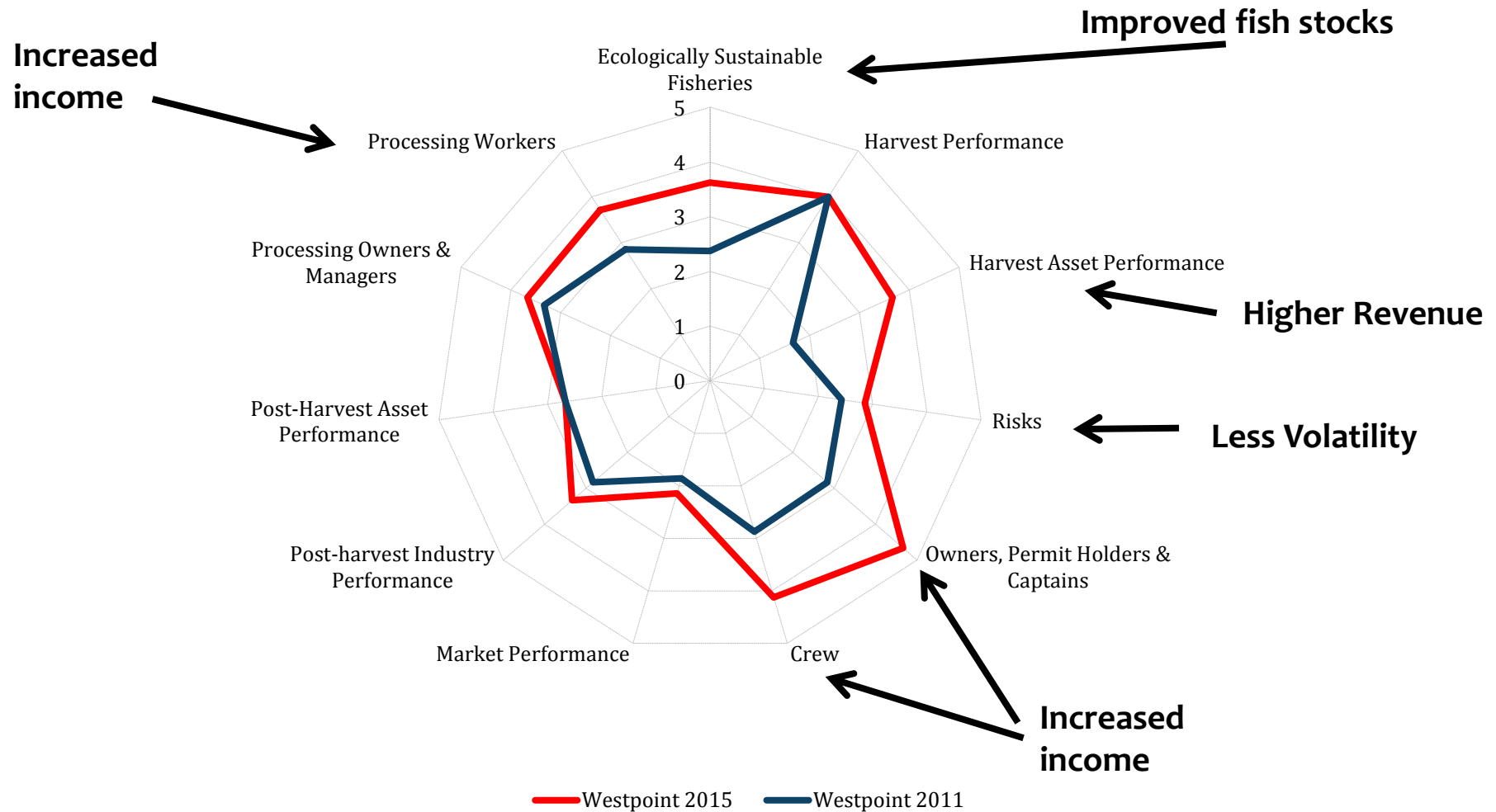
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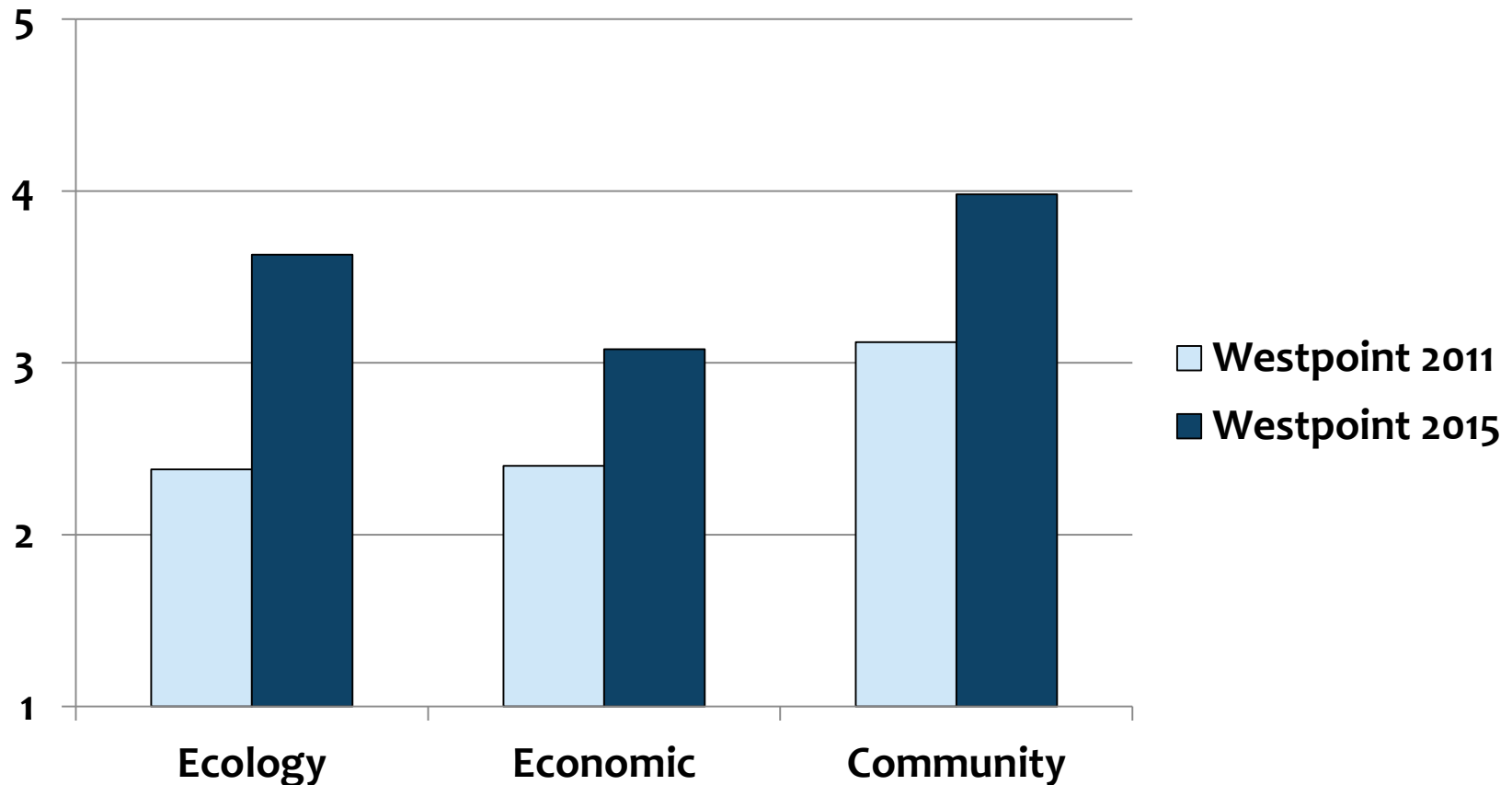
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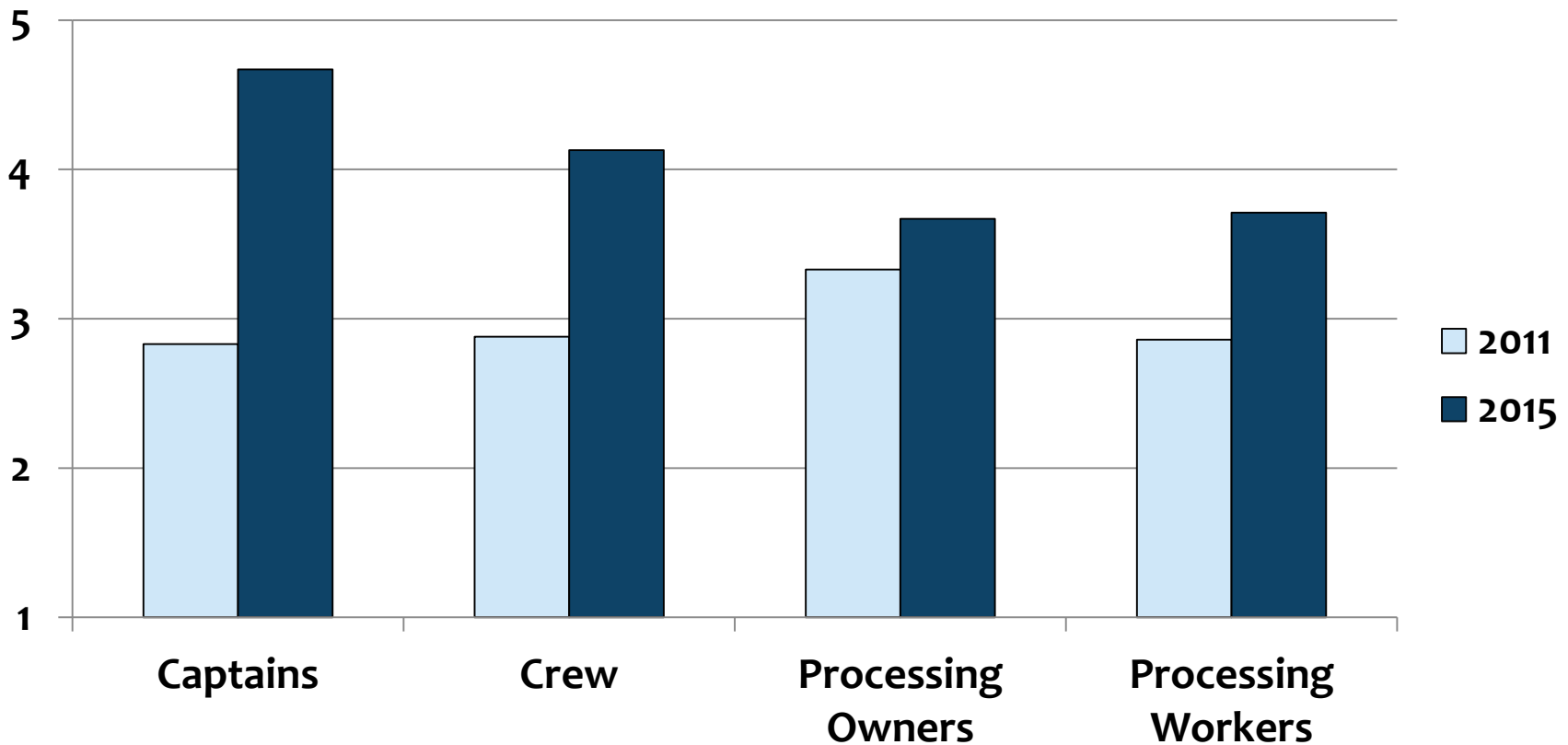


Triple bottom line



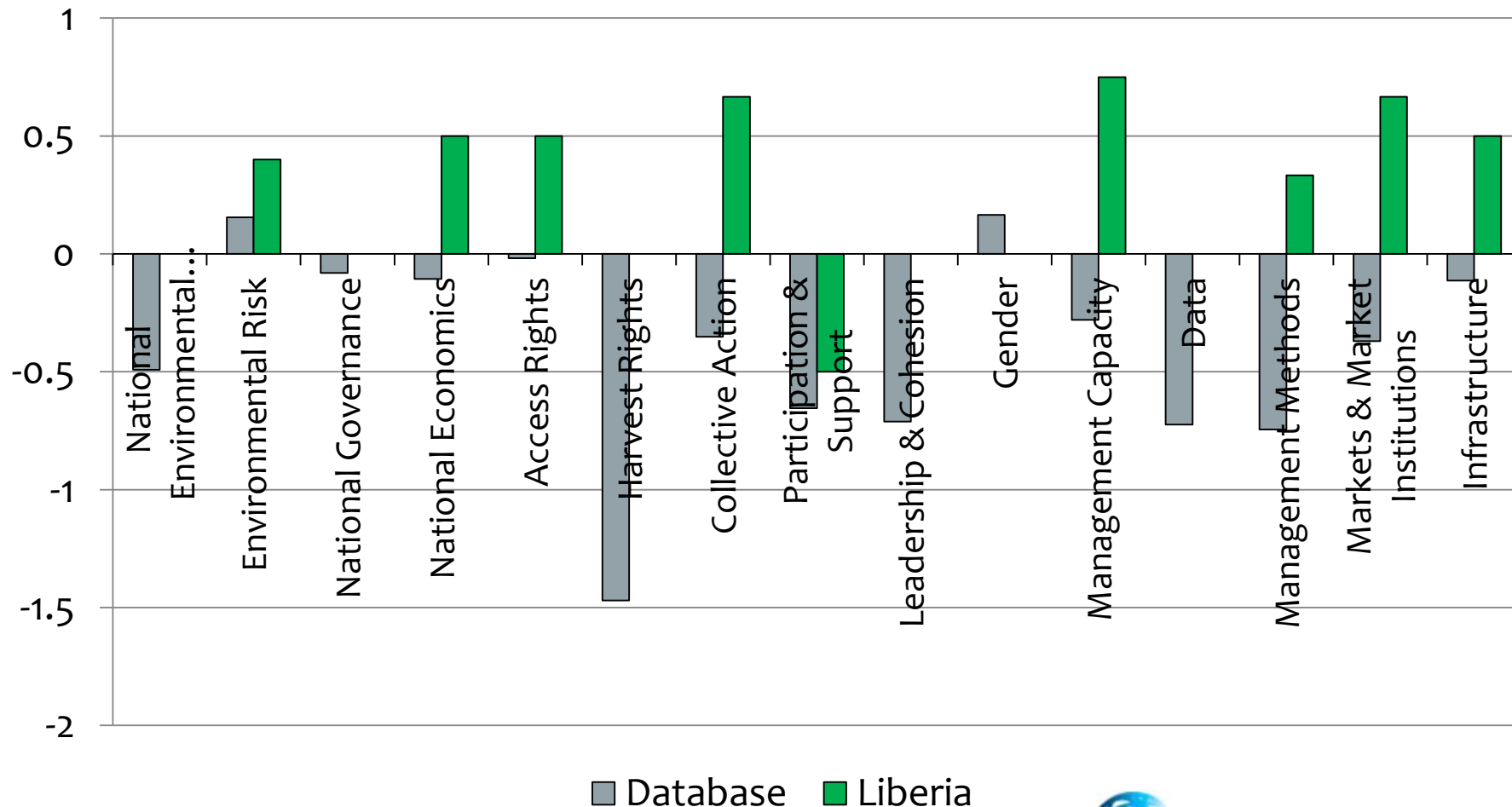
And all fishery participants were better off

Performance of Fishery Participants



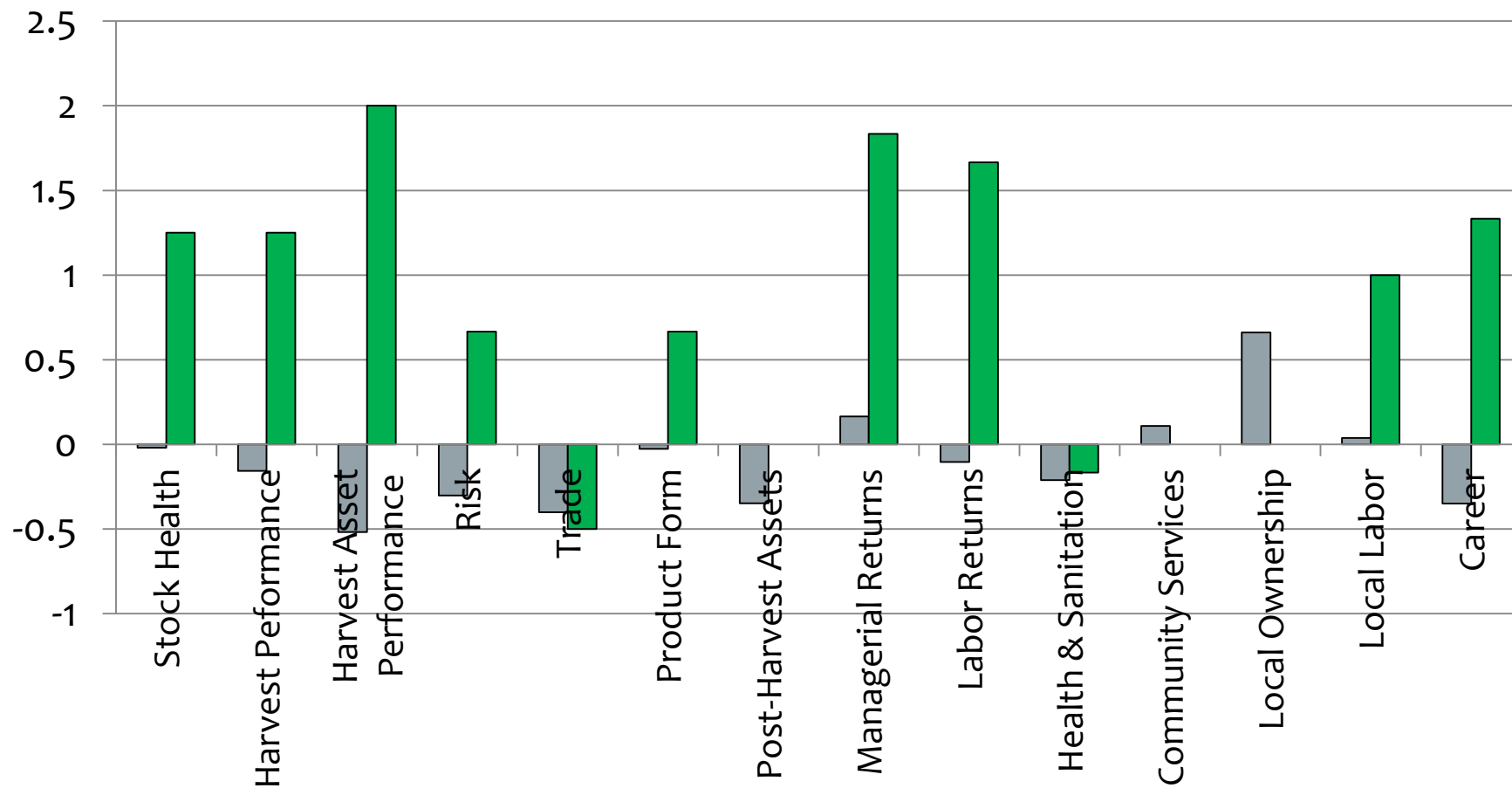
Liberia relative to the FPI data base: Inputs

Change in FPI Inputs between 2011 and 2015



Liberia relative to the FPI data base: Outputs

Change in FPI Outputs between 2011 and 2015



Conclusions

- * The FPIs can easily be collected **at the start and the end** of any fisheries improvement project
- * This makes them **a useful tool in project evaluation**, particularly for complex projects with multiple objectives and in data poor environments
 - * Complements traditional NPV measures
- * **Can be strengthened compared by implementing a control as part of the project**
 - * But it can be difficult to obtain funding or control as the project is national and policy and other measures will have impacts all over the country
 - * The FPI data base is an alternative, but it is so far not collected with such purposes in mind