REVIEW ON

CURRENT PERSPECTIVES ON FUEL SUBSIDIES

IN THE FISHERIES SECTOR

0. INTRODUCTION

The fundamental proposition underlying the economics of the management of fishery resources, is that these resources constitute natural capital assets. The economics of fisheries management is then, at its heart, addressing a problem of real capital asset management, in that it is concerned with the management of a set of real capital assets, contained within society's overall portfolio of real capital assets, with the objective of maximising the economic benefits, which these fishery assets are capable of providing to society, through time (Bjorndal and Munro, 2012). The basic objective of fisheries management is to stabilise fish stocks, i.e., stocks of fisheries capital, at levels that will optimise the economic benefits to society over time.

Moreover, as will be discussed below, fishery resources – if properly managed – are able to yield "resource rents", a surplus over and beyond what is needed to compensate fishing effort (labour and capital) (World Bank, 2009). In reality, however, at the world level resource rent is dissipated, and a large number of fish stocks are either fully exploited or overexploited (FAO, 2012). On top of that, fisheries are heavily subsidised, a situation that is likely to provide added incentives for stock depletion.

This report is organised as follows. Section 1 offers a definition of what is understood by the concept subsidy. Moreover, a discussion as to why a government may wish to provide a fuel subsidy is provided. Section 2 provides information about the magnitude of subsidies in general, and fuel subsidies in particular, in the context of world fisheries. A theoretical analysis of the consequences of introduction of a subsidy in the context of a bioeconomic model is presented in section 3. Section 4 analyses the consequences of a fuel subsidy, under different management regimes, with additional analysis is section 5. Conclusions and recommendations are given in the final section.

1. DEFINITION

There are different definitions of a subsidy and at times it may be difficult to determine whether a government financial contribution actually represents a subsidy. According to the 1994 WTO Agreement on Subsidies and Countervailing Measures (ACSM), which provides a legal definition of a subsidy in international trade law, any financial contribution by a government is a subsidy, if it is a benefit to specific domestic industry from

-transfers of funds including grants, loans and equity infusions,

-potential transfers of funds such as loan guarantees or government insurance,

-foregone government revenue from tax exemptions,

-goods or services provided to the industry other than general infrastructure,

-indirect support through payments to a funding mechanism or privately held body to perform any of the above,

-price or income support programmes other than tariffs.

FAO's "Guide to Identifying, Assessing and Reporting on Subsidies in the Fisheries Sector" offers a somewhat different approach to the definition: "Fisheries subsidies are government actions or inactions outside of normal practices that modify, by increasing or decreasing, the potential profits by the fisheries industry in the short, medium or long-term" (FAO, 2004, pp. 7-8).

A subsidy on fuel will reduce the effective price paid by fishermen below normal market price. This will reduce their variable costs and thus impact profits. This kind of intervention is clearly a subsidy, both according to the WTO and the FAO.

In general, governments may provide subsidies for a number of reasons including:

i. Increase fishermen's incomes.
ii. Increase employment in the fishing sector.
iii. Enhance food supply.
iv. Improve the competitiveness of the sector.

In the case of fisheries, a major reason is likely to be income support as fishermen's incomes often are lower than in other occupations. By reducing cost of production, profitability may increase, thus increasing incomes. Fisheries are on the wholly concentrated in outlying areas. Due to limited alternative employment opportunities the opportunity cost of labour is low; thus, fishermen's incomes are low. The government may therefore wish to introduce instruments that may contribute to raising income to levels closer to a national average.

The second objective is closely related to the first. In addition to raising incomes, the sector as a whole may expand as a consequence of subsidies, thus boosting employment. This may be particularly relevant to fisheries which are generally based in outlying areas with limited alternative employment opportunities.

Fish is a major source of food in many countries, in particular developing countries (FAO, 2012). By reducing cost of production, one may think that production will expand, thus enhancing food supply and improving food security. This can also happen indirectly: by increasing food production, incomes will increase which in turn may be used to purchase more of other food products, thus enhancing food security in general.

Fish is very much a traded commodity. Developing countries now represent about 50% of international fish trade (FAO, 2012). Fish products are sold in competition with other products, be they agricultural products or fish from other countries. A fuel subsidy, reducing cost of production, may make it possible to supply the product at a lower price, thus improving competitiveness.

In addition to these four tangible objectives, we will also consider the impact of a fuel subsidy on stock sustainability.

Governments can use different instruments to reach the objectives outlined above. It is beyond the scope of this paper to discuss the effectiveness of alternative instruments. Thus, in the following, only the consequences of a fuel subsidy will be analysed.

2. WORLD FISH PRODUCTION AND SUBSIDIES

In 2010, the capture fisheries of the world produced a total harvest of 87 million tonnes with a "first sale" value of about $ 95 billion (FAO, 2010).

According to the *Sunken Billions* report (World Bank, 2009, if ocean fisheries were managed optimally, they would yield resource rents in the order $ 50 billion per annum. The study continues that these same resources are currently yielding no resource rent whatsoever, due to overexploited fish stocks and excessive use of fishing effort (labour and capital) in fisheries.

According to Khan *et al.* (2006), global fisheries subsidies less fuel subsidies amount to $ 25.7 billion per year (2000). With the value of commercial fish catches estimated at $ 80 billion for that year, this represents 32 % of revenues.

Sumaila *et al.* (2006) estimated global fuel subsidies for year 2000 to be in the range $ 4.2 – 8.5 billion. In other words, fuel subsidies represent not only a major fraction of total fisheries subsidies (16.3 – 33.1%) but also up to 10.6% of the annual commercial fish catch value for that year. Sumaila *et al.* (2010) provide an update for 2003, with fuel subsidies estimated at $ 6.4 billion and total subsidies at $ 27.2 billion.

To the best of our knowledge, more recent estimates do not exist. According to informative sources, if anything, fuel subsidies have increased since 2003.[1]

Indeed, it is likely that many fishing vessels are in operation only because of subsidies.[2]

As noted, fuel costs represent a major share of revenue. Moreover, fuel costs are typically among the largest variable costs of fishing, usually second only to crew costs. As an example, for Scottish pelagic trawlers average fuel costs amounted to GBP 1.39 million in 2009, or 29% of total operating costs.

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[1] Source: Professor R. Sumaila, private communication (February 2013).

[2] See: http://www.undercurrentnews.com/2013/02/14/report-intermarche-fleet-is-loss-making-destructive-propped-up-by-subsidies/#.URymuaVWx8E

For Norwegian purse seiners, average fuel costs in 2011 represented NOK 4.63 million, or 14% of total operating costs (Lappo, 2013).

More than that, as can be inferred from figure 1, the commodity fuel price index[3] roughly doubled from 2000 – 2005, and then again almost doubled from 2005 – 2011.

As noted in the introduction, there is every reason to believe that fisheries subsidies have contributed to resource overeploitation (Bjorndal and Munro, 2012; Sumaila *et al.*, 2010). An increase in cost of harvesting will lead to an increase in equilibrium stock level, both under open access and optimal management (Bjorndal and Munro, 2013; see also section 3). Indeed, Sumaila *et al.* (2006) point to recent substantial increases in the fuel price and question whether this will help reduce overfishing, as fuel price increases reduce the profitability of fishing. There seems little to be little evidence that this is the case.

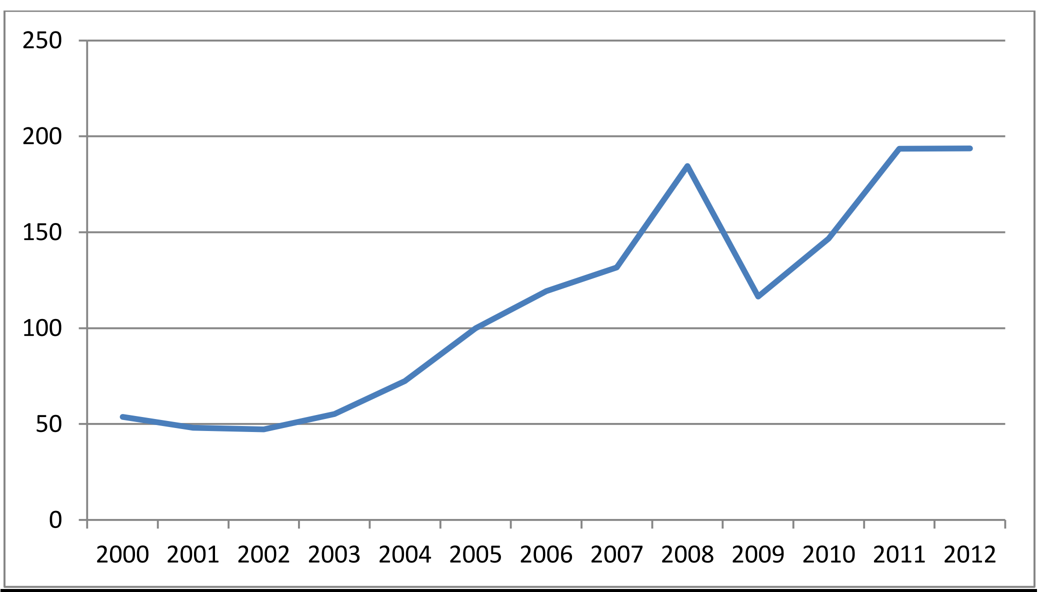

Figure 1. Commodity Fuel Index - Includes Crude Oil (Petroleum), Natural Gas, And Coal Price Indices for The World 2000-2012. 2005 = 100.

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[3] This index covers crude oil, natural gas and coal. There is every reason to expect that fuel price for the fishing industry has developed in line with this index.

3. THEORETICAL ANALYSIS[4]

In this section, we will first outline the basic Gordon-Schaefer model. This will then be used to analyse two management regimes, namely optimal management and open access. The impact of a fuel subsidy in the context of this model will be illustrated.

<u>The Gordon –Schaefer Model</u>

We will first briefly outline the Gordon-Schaefer model. We start with the growth function

$$F(X) = rX[1 - X/G] \quad (1),$$

where r is the instantaneous growth rate, G the carrying capacity of the environment, X stock size at time t and F(X) is natural growth. The harvest (h) function is given by

$$h = qEX \quad (2),$$

where q is the catchability coefficient and E fishing effort. Stock dynamics are represented by

$$\dot{X} = F(X) - qEX \quad (3)$$

where $\dot{X}$ is the time rate of change in the stock.

We will develop the model in terms of revenues and costs with respect to sustainable harvests. Fishing effort costs C(E) can be expressed as

$$C(E) = bE \quad (4)$$

where b is the unit effort cost and E is fishing effort. In this simple model effort represents the services of labour, fuel and other variable inputs as well as capital (fishing vessels), which are assumed to be combined in fixed proportions.

From equation (2) we get an expression for E:

$$E = h/qX \quad (5)$$

Thus we have total harvesting costs:

$$C(h, X) = bh/qX \quad (6)$$

while unit, or average harvesting costs c(X) are:

[4] This is based on Bjørndal and Munro (2012).

$$c(X)=\{bh/qX\}/h=b/qX \quad (7)$$

Note that total harvesting costs are a function of X as well as of h. We note that $c'(X) < 0$, i.e., unit harvesting costs are declining in stock size. Intuitively, as stock size increased so does catch per unit effort; consequently, unit harvesting cost must decrease.

Let us to move on to concept of sustainable revenue in biomass (X) space. We assume the stock is in steady state so that $\dot{X} = 0$, i.e., $h = F(X)$. Thus, fhe F(X) curve can be seen as a sustainable yield curve over the range $0 \leq X \leq G$. Now, multiply F(X) by p and we have a sustainable revenue curve $TR = ph = pF(X)$. Consider now figure 1.

The total cost curve in figure 1 represents the minimum cost of harvesting the sustainable yield. If harvesting is taking place on a sustainable yield basis $h = F(X)$, then the total harvesting cost function becomes

$$C(F(X), X)=bF(X)/qX \quad (8)$$

By use of (1), we can re-express equation (10) as:

$$C(F(X),X)=br/q[1 - X/G]= TC_{min} \quad (9)$$

Thus, TC_{min} is a linear, decreasing function of X.

Optimal Management: Maximum Economic Yield

As explained in the introduction, in fisheries economics, a fish stock is considered a natural capital asset (Bjorndal and Munro, 2012). It is the objective of a social planner to maximise the economic benefits from this fish stock over time. We will here determine what stock level will give rise to maximum benefits from the resource over time.

In the context of the current static model, Maximum Economic Yield (MEY) is obtained where the distance between the TR_s and TC_{min} curves are maximised, i.e., where $MR_x = MC_x$. In figure 1, this is for stock level X_{MEY}, which indicates that resource rent – the vertical difference beween the TR_s and the TC_{min} curves - is maximised.

As Maximum Economic Yield (MEY) represents optimality, then X_{MEY} is the optimal resource stock. If the stock is maximized at this level, and effort maintained at the minimum level according to TC_{min}, the stipulated resource rent can be maintained *ad infinitum.*

From figure 1, in equation (9), it can be seen that a reduction in the unit cost of effort, b, will lead to a reduction in X_{MEY}.

As already noted, this model is static. The dynamic version of this model (Bjørndal and Munro, 2012) is not developed here as it cannot be easily demonstrated graphically, however, also in this case a reduction in b will lead to a reduction in X_{MEY}. For our purposes, the static model will suffice.

Bionomic Equilibrium

Let us assume that initial stock size is X_{MEY}. This implies that pure rents are being made. If this is an open access fishery, there will be entry to the fishery. This will be the case until all rent has been dissipated. We end up in bionomic equilibrium, with stock size equal to X_{BE}.

We note that Bionomic Equilibrium implies $TC_{min} = TR_s$, i.e.,. $bF(X)/qX=pF(X)$. Solving for X we have:

$$X_{BE} = b/pq \tag{10}$$

From this equation it is also seen that a reduction in the cost of effort, b, will lead to a reduction in X_{BE}.

Figure 1 makes clear the resource consequences of Pure Open Access. It is not just a matter of overallocation of labour and (produced) capital to the fishery. There will be overexploitation – excessive disinvestment of natural capital – as well.

Since $X_{BE} < X_{MEY}$, open access leads to unequivocal resource overexploitation.

A fuel subsidy

Figure 1 can be used to illustrate the consequences of the introduction of a fuel subsidy. Thus, fishermen are faced with the following effective price for effort:

$$B = b - s$$

where s is the subsidy per unit of effort. The subsidy can take two forms. One is a direct handout from the government to the suppliers of fuel, at the given rate. The other would be non-collection of taxes on fuel.[5]

For sake of illustration, we assume that the effective price B is halved due to the introduction of the subsidy.

In terms of our model (equation (10)), the halving of b will, other things being equal, cause the minimum costs of harvesting the sustainable yield, for any given level of *X*, to be reduced by 50 per cent. This is illustrated in figure 2. It can here be seen that X_{BE2} is half of X_{BE1}.

4. THE CONSEQUENCES OF A FUEL SUBSIDY

We will in this section analyse the consequences of introduction of a fuel subsidy. This will be done in the context of the Gordon-Schaefer model, for open access and optimal management as well as regulated open access. In section 5, we will consider this issue in the context of a more complex model.

In the bioeconomic model presented, price is considered constant and unaffected by changes in supply. Thus, in the context of this model, there will be no impact on competitiveness. This issue will therefor be discussed in section 5.

Open Access

In section 1, we stipulated four government objectives for the introduction of a subsidy. We will here analyse how a subsidy might impact on these objectives

Increase fishermen's incomes.

[5] This illustrates the fact that a subsidy can be considered a negative tax.

In this simplistic model, fishing effort consists of fixed proportions of various inputs in the production process including labour. Moreover, the price per unit input is considered fixed. Thus, although a fuel subsidy will affect the effective price per unit effort, it will not affect the remuneration per unit labour, i.e., fishermen's incomes.

This situation would be different if

$$w = w(L) \text{ with } w'(L) > 0,$$

where w is the wage rate and labour the amount of labour used in the fishery. In this case, the wage rate depends on how much labour is used, with the wage rate increasing in the use of labour.

It is essentially an empirical question whether this is so. Many fisheries are based in areas characterised by higher than normal levels of unemployment and limited alternative employment opportunities. In a situation like that, increased use of labour is likely to have no perceptible impact on the wage rate.

Other issues will be considered below.

<u>Increase employment in the fishing sector.</u>

In the model under consideration, the fuel subsidy will increase the use of effort so that employment will be boosted. Having said that, from a social point of view, this simply means that there is even more overallocation of labour to the fishery which is socially wasteful and by no means is desirable.

Moreover, it must be pointed out that this potentially happens at the expense of the potential future sustainability of the stock. As the stock is depleted, it becomes more vulnerable, not only to environmental shocks, but also biological phenomena such as a minimum population level. Thus, excessive stock depletion brings with it the danger the stock may never be able to recover.

<u>Enhance food supply.</u>

In the short run, introduction of a fuel subsidy will increase fish landings: as effort is expanded, a process of stock depletion is initiated, and in the period until the new stock equilibrium is achieved, fish landings will increase.

Whether fish landings will increase in the long run, is a different question. This depends on the initial level of the TC_{min} curve. If the initial TC_{min} curve crosses the sustainably total revenue curve to the right of X_{msy}, it is conceivable at fish supply will increase in the long run. If, on the other hand, if the TC_{min} curve crosses the TR_s curve at stock level equal to or less than X_{msy}, long run fish supply will actually decline.

The actual outcome is therefore an empirical question which may vary from fishery to fishery. Having said that, between 80-90% of the world's fisheries are classified as either overexploited or fully exploited (FAO, 2012), implying that stock levels are equal to or less than X_{msy}.

Thus, for the vast majority of fisheries, a fuel subsidy would under open access lead to reduced food supply in the long run.

Optimal Management

In this situation, we assume that the fishery is stabilised at stock level X_{MEY}, with annual harvest $h = F(X_{MEY})$ and $TR = pF(X_{MEY})$.

Moreover, let us assume that the fishery is managed with Individual Transferable Quotas (ITQs). What is important to note is that, from a social planner's perspective, the optimal stock level would not change due to the introduction of a fuel subsidy. We therefore assume that $X^* = X_{MEY}$ is unchanged due to the introduction of the subsidy. The consequences will then be as follows:

Fishermen's incomes will increase with the value of the fuel subsidy[6].

Employment in the sector will be unaffected, as effort will not change.

Food supply will not be affected.

The competitiveness of the sector will not be affected.

In essence, a fuel subsidy would in this scenario represent a direct income transfer from the public purse (taxpayers) to fishermen.

It should, however, be recognised that profitability in the fishery may be high and that this will even increase as a consequence of introduction of a fuel subsidy. This may lead to a demand from fishermen for higher quotas. If successful, the consequences will depend on the initial level of the equilibrium stock size. Depending on the location of X_{MEY} to X_{MSY}, and how large the increase in quota is, the impact on long run fish supply is uncertain. There would,

[6] This value will be capitalised in the value of the ITQs, be the subsidy of a short run or a long run nature.

however, be some increase in employment. Importantly, there would be a reduction in stock size below what is socially desireable and a wasteful allocation of labour and capital to the fishery.

Regulated Open Access

Although open access is the management system, or lack thereof, that characterised most world fisheries until some decades ago, and important characteristics of open access are still found in numerous fisheries worldwide, most fisheries are now subect to some kind of regulation. Munro and Scott (1985) developed the concept of the Class II open access fishery, while Wilen (1985) coined the term regulated open access.

First, consider the introduction of a total allowable catch quota (TAC). If set at an "appropriate" level, and enforced with iron control, this could ensure the future sustainability of the stock. Second, this could be combined with "limited entry", only active vessels would be permitted to participate in the fishery. This would cause a new race for fish, where fishermen would compete for shares of the given TAC. Munro and Scott (1985) show that, under plausible assumptions, this would lead to total dissipation of resource rent.

Again, while this model may have been an appropriate description for the management of a number of fisheries in the past, management has often advanced to avoid some of the excessive outcomes of such competive behaviour. Despite this, it is nevertheless the situation that there is incentives for racing behaviour in many fisheries that may lead to dissipation of rent.

As a consequence of this, as opposed to open access and optimal management, one cannot talk of "one" regulated open access model. Care must therefore be exercised when it comes to drawing implications from the introduction of fuel subsidies:

Fishermen's incomes: As in the open access fishery, due to the underlying assumptions of the model, fishermen's incomes will not be affected.

Employment: If the intensity of the fishery increases, there may be an incrase in nominal employment, however, it is not likely there will be much change in total employment measured as full time equivalents.

Food supply: Assuming the TAC remains binding, there will be no change in food supply.

As in the case of open access, there is certainly the possibility that the fuel subsidy, temporarily improving profitability, may lead to a demand from fishermen for higher quotas. Indeed, in all management systems, stakeholders will be consulted as to the size and appropriateness of quotas.

If demands for higher quotas are successful, the consequences will depend on the initial level of the equilibrium stock size as was the case for optimal management, and the impact on long run fish supply is uncertain. The expansion in quota is likely to lead to some increase in employment. Importantly, there would be a reduction in stock size below what is socially desireable and an even more wasteful allocation of labour and capital to the fishery.

5. FURTHER ANALYSIS

The analysis in section 4 was in the context of the Gordon-Schaefer bioeconomic model. Although the analysis gave important and interesting insights, we will here provide some additional analysis based on relaxation of some of the more stringent assumptions underlying this model.

<u>The concept of fishing effort</u>

The Gordon-Schaefer model employes the concept of fishing effort, combining fixed proportions of labour and capital inputs. An example could be the concept of "standardised fishing days".

> In reality, effort can be considered a composite input, consisting of factors such as labour (often of different types and skill sets), capital (vessel type and size), fishing gear (type and quanity) and numerous other inputs such

as fuel, bait, provisions and more. Bjørndal (1989) uses the concept of an "effort production function", namely, the combination of all the factors mentioned above in the production of fishing effort.

From an economic point of view, the rational vessel owner is faced with the problem of selecting the cost minimising combination of factors of production. This choice will depend on the relative prices of these factors. We must here make an important distinction between the short and the long run. In the short run, the boat is "given", and so are the factors of production. In this context, the Gordon-Schaefer assumption of fixed proportions of labour and capital appears quite reasonable.

The situation is very different in the long run. In the long run, the vessel will need to be replaced, based on future relative prices of factors of production. This means that proportions of labour and capital cannot be considered positive in the long run.

If we use concept of effort production function, as noted, the introduction of a fuel subsidy will reduce the effective price of fuel. A profit maximising vessel owner will then increase the use of fuel, *caeteris paribus*. This will lead to more intensive use of the vessel and may have an impact also on the use of other inputs. For example, if fishing for more days, labour and bait use may also increae. Nevertheless, the impact on the use of other factors os production is likely to be limited.

This situation is likely to be different in the long run. A fuel subsidy reduces the price of fuel relative to prices of other factors of production. If the subsidy persists also in the long run, this may lead to substitution among factors of production, in particular leading more fuel intensive engines at the expense of other inputs.

This substitution effect is likely to worsen the long run consequences of a fuel subsity.

Improved competitiveness

It is some times maintained that, if one country subsidises its fleet, it will have a competitive advantage in the marketplace vis-à-vis fleets from countries that do not subsidise their fleets. We will try to through some light on this issue which could not be analysed in the context of the Gordon-Schaefer model, where price is assumed to be constant. Essentially the issue of competitiveness depends on market structure.

It is the combined supply of a species – possibly from different countries – that in combination with demand (and other variables affecting the demand schedule) that determine price. It is fair to say that, for a number of species, even if supply from one particular fishery may change from year to year this will not have a perceptible impact on total supply, and thus not price.

Pelagic fisheries used for reduction into fish meal and fish oil such as anchoveta, blue whiting and capelin show tremendous variation from year to year, often due to environmental shocks. Asche and Bjørndal (2011) show that it is the total supply of feed meals, of which soya by far represents the major share and fish meal only a minor share, that determines price. Consequently, even a major change in supply of e.g. capelin from one year to the next may have little or any impact on price.

On the other hand, there are fisheries where changes in supply will clearly affect price. An interesting example is provided by North Sea herring. As the stock was on the path to near extinction in 1977 due to open access exploitation, price increased from year to year in line with reductions in annual quantity (Bjørndal and Conrad, 1987). This, of course, had the perverse incentive of intensifying the incentive to decimate the stock.

<u>Subsidies in agriculture</u>

Munro and Sumaila (2012):

The problem referred to is in no sense unique to fisheries. It arises in a major way in agriculture, particularly within the developed world. Various subsidy programmes, designed to provide income support for farmers, have been seed to lead to the production of immense surplus crops, and to numerous distortions in internationl trade in agricultural products, often to the detriment of developing country exporters. An obvious example of such a subsidy progrmme is one etablished to ensure a minimum price for a given agricultural crop. This has led, in the field of agriculture, to much discussion of the concept of "decoupling". What is to be "decoupled" is the support to farmers' income from the farmers' production plans.

6. CONCLUSIONS AND RECOMMENDATIONS

At the outset of this analysis, we set out four objectives that fishery subsidies are typically intended to achieve, namely:

i. Increase fishermen's incomes.
ii. Increase employment in the fishing sector.
iii. Enhance food supply.
iv. Improve the competitiveness of the sector.

In addition, stock sustainability has been considered as an important variable. Although the analysis has not been conclusive in all instances, some very broad conclusions can be drawn.

Increase in fishermen's incomes is in most instances an important objective. The present analysis suggests that a fuel subsidy will have little, if any, beneficial impact on fishermen's incomes.

Under some scenarios – open access, less than perfect optimal management, regulated open access – there may be an increase in *employment*. Having said that, it would be at the expense of even more socially wasteful allocation of labour and capital to the sector and (additional) stock depletion.

While *food supply* in general will increase immediately following the introduction of a fuel subsidy, a situation that may persist until a new equilibrium is attained, in the long run sustainable food supply is in fact likely to decrease.

Competitiveness

Stock sustainability will in general deteriorate due to fuel subsidies. In most situations, a fuel subsidy will lead to a reduction in equilibrium stock level which will generally by below X_{MEY}. In the case of severe stock depletion, a fuel subsidy may even endanger the future viability of the stock.

Conclusions:

1. Fuel subsidies are in general wasteful – no positive impact can be identified.
2. Other instruments than fuel subsidies must be found to achieve relevant government objectives.

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APPENDIX

Table 1. Commodity Fuel Index - Includes Crude Oil (Petroleum), Natural Gas, And Coal Price Indices for The World

Year	USD
2012	193.75
2011	193.572
2010	146.727
2009	116.492
2008	184.473
2007	131.692
2006	119.233
2005	100
2004	72.414
2003	55.228
2002	47.185
2001	48.012
2000	53.692

Source: http://www.economywatch.com/economic-statistics/price-index-indicators/Commodity_Fuel_Index/

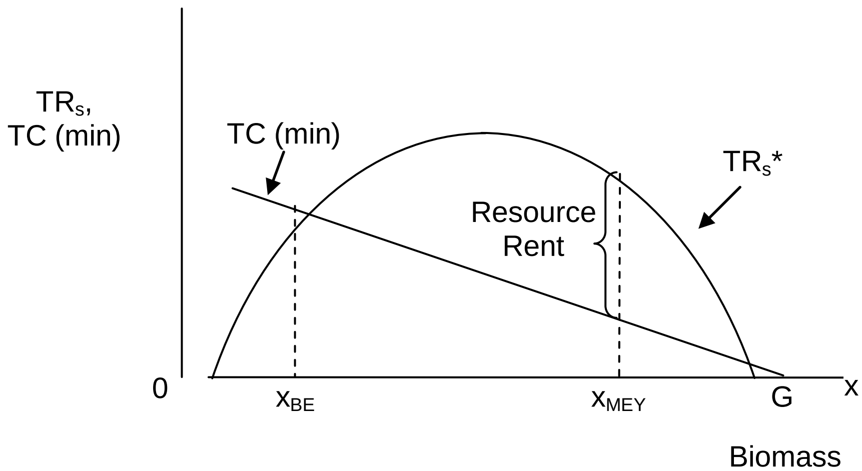

Figure 1. The Gordon-Schaefer Model. $TR_s = p \bullet F(x)$

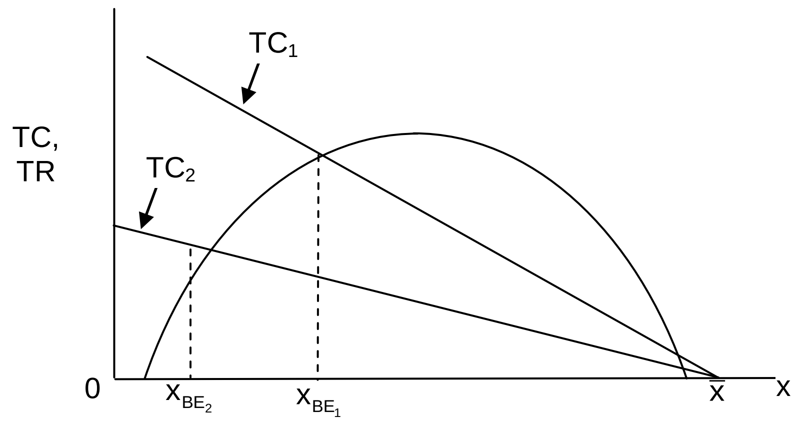

Figure 2. The Impact of a Fuel Subsidy.