

INTERCONNECTIVITY OF INTELLECTUAL PROPERTY RIGHTS AND SANITARY AND PHYTOSANITARY MEASURES

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Abstract

The aim of implementing food standards through the procedures of the Sanitary and Phytosanitary (SPS) Agreement has been to enhance social integration and food quality within the areas of human, animal and plant standards. This paper looks at the overall improvement of quality standards of homogeneous integration and interaction of solidarity at all levels of society through the international trade linkage to economic development and the business enterprise. The aims are to understand the interconnectivity role of patents and intellectual property rights concerning the establishing of standards and the compliance cost of producing quality food at the minimum SPS residual measures.

KEYWORDS: Intellectual Property Rights, Standards, Quality Food, Cost-Benefit Model.
JEL CLASSIFICATION: F18, O34, Q13, Q17, Q18.

1. *Introduction*

The business enterprise plays an important position in the Agri-food processing industry, which is a very competitive sector and the perceived economic enhancing tools are innovation and technology. The implementation of the Sanitary and Phytosanitary (SPS) Agreement is aimed to enhance well-being and the social integrity for Quality Food Products (QFP) within the areas of human, animal and plant standards. These standards coupled with the ever increasing debate of Intellectual Property Rights (IPR) in connection with the Trade Related Intellectual Property Rights (TRIPS) Agreements, creates the framework of harmonious integration/interaction and solidarity at all levels of society to provide further protection with the enhancement of QFP. Therefore, quality food marketing decisions are stipulated through the interconnection of SPS standards and the protection of Intellectual Property Rights, covering a wide marketing framework in the development of QFP by using IPR to create health and safety images in the

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human mind and intellect. The business enterprise can lower the cost of SPS compliance by differentiating its production and in the process establish international trade protection policies. The workings of the SPS regulatory framework and TRIPS present various challenges and opportunities in the marketing and expansion of QFP in the international trade atmosphere.

However, the pre-requisites needed to achieve such measures of high QFP and equal opportunities for general food production systems, are the innovation of technology and its role in protecting health and safety. Science and technology is of great importance for the innovation and the setting of standards at the Codex Alimentarius level. The purpose of the Codex is to establish a food standard programme to protect the health of consumers, ensure fair practices in the food trade and to facilitate the international trade in food. However, this is further being established by the means of correlating standards to specific quality food products and the protection of these standards through these products, which is maintained by intellectual property rights. This is because the production of QFP, requires large research and development costs and the business enterprise views the need for intellectual property rights for it to continue this expansion of quality production through standards. Hence, the development of international trade of QFP is affected by the principles of patents, the knowledge base, in the implementation of food processing applications and the management and conservation of such resources, this leads to protection by patents in an economic, commercial and cultural development environment. This can be evaluated by the means of establishing a framework to evaluate the cost of compliance of SPS standards and the impact that intellectual property rights have with the interconnectivity of SPS regulation measures on QFP trade. Here the interconnectivity of intellectual property rights and sanitary measures are built upon a framework used to perform an assessment of the interconnectivity and the welfare factor of QFP, this is by adapting a cost-benefit model to evaluate the welfare structure of standards and evaluate patent protection for multinational business enterprises. Furthermore a cause affect framework is developed to provide a paradigm impact of SPS and IPR measures on QFP and Quality Food Markets (QFM). It is evident that this will provide a fall in social welfare benefits to the consumer as patents increase the complexity and protective stance of international trade in processed Agri-food produce. Therefore, this is evaluated by exploring how food production has changed in order to sustain trade levels while adopting SPS measures.

The development of international trade in QFP has increased through advancements in technology and continual innovation of SPS standards, which has the ability to progress the distortion and divergence of economic development. Technological advancements associated with food standard compliance and the implementation of these measures could lead to disadvantages in trade as intellectual property rights have a protectionist measure, as is evaluated through developing paradigm theories.

Hence, here within the interconnectivity of intellectual property rights and SPS measures are examined through examining the cost of technological innovation and patent revenue benefits, used to establish higher minimum residual food standards, which as a result leads to increasing costs and protection. Assessments are also made upon the risks of compliance, evaluating the costs of implementing and compiling with standards. Further assessments are made on the overall cost added by IPR and SPS interconnectivity upon the economic development of nations.

2. Link between Quality Food Products and Sanitary and Phytosanitary Measures

The Sanitary and Phytosanitary (SPS) agreement established an understanding that SPS measures set out the objectives of the nature of establishing a wide marketing framework for the development of QFP, the need for QFP is not a new phenomenon, however is increasingly becoming of interest by consumers over the last few decades due to many problematic outbreaks overtime. The productions of QFP are pre-determined by SPS measures designed to protect health and safety in humans, animals and plant life, however its first priority is trade development as it is en-coupled in the SPS agreement. As a consequence these measures have become increasingly important to international trade of food, agricultural, and livestock products. Highlighting concerns of its misuse to distort trade, which is an area in need of assessment and is assessed by evaluating the cost of compliance with SPS measures (especially Codex standards within regards to food products). The European Union (EU) is a prime example of assessment for the cost of compliance with SPS measures. The use of SPS measures are intensely used to regulate the entry of foreign goods believed to be of lower quality. Therefore creating a framework of transparency for QFP that provide harmonisation of natural standards for QFP and avoid any harmful food variables and as a result increases

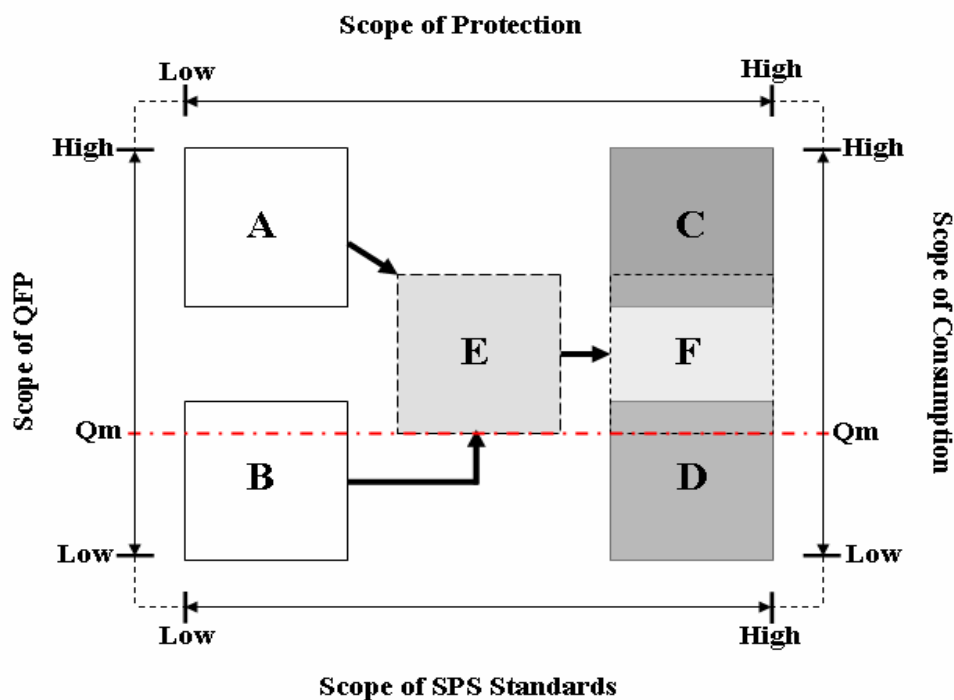
consumer well-being in the areas of health and safety with high quality food produce. A number of studies have exemplified the importance of standards, the Codex and SPS standards; also provide a protective stance and policy for increasing consumer well-being and confidence with increased QFP. The importance of SPS measures and QFP links are undoubtedly necessary in increasing trade and food standards. Quality Food Products interlink the need for the implementation of regulatory standards to increase trade. The use of SPS measures and the advantages and disadvantages of such consumer enhancement measures of sanitary and phytosanitary requirements can be seen through many studies, cf. Antle (1999); Bureau, *et al* (1999); Fischer and Serra (2000); Harrigan (1993); Henson, *et al* (2000); Henson and Loader (2000). Further studies that demonstrate this, cf. Howse and Trebilcock (1999); Maskus and Wilson (2001); Orden and Roberts (1997); and Trefler (1993). Fischer and Serra's (2000) study establishes a link between the protective stances of SPS measures.

Consumers have the rights and obligations for high QFP, these are relevant and a pre-requisite to any agricultural food product marketed to consumers. The welfare enhancement and well-being in relation to the health of food, animal and plant products need a restrictive regulatory framework for the protection of QFP. The aim of SPS measures are to maintain this sovereign right and to position a consumers regulatory policy within conformity of its consumer consumption markets in order to provide a level of SPS health projection deemed to be appropriate for ensuring that any standards, provide a welfare enhancement to any consumer sovereign right and their rights to choose between higher quality food. However, it must not result in higher costs without justification and furthermore is not misused as a protectionist measure resulting in a barrier to Codex standards settings and trade barriers. The link of QFP and SPS are within the Codex framework that is established under the World Trade Organization (WTO) protocol, for which notification provisions are implemented that create a QFP protocol for new standards. The need for QFP are the foundation and provision of the SPS accord, all provisions of SPS are implemented on the basis of providing high QFP that results in the increase of the consumer's well-being, satisfying the economic welfare tool to increase confidence and the consumption of geographically local produce which is linked to property rights and leads to an adversely protectionism impact. This loophole allows countries to provide an interdependence policy

framework closely linked to the consumption patterns of their consumers. These measures provide the introduction of high standards set under the Codex provisions that state minimum requirements. In economic instances this provides a protectionist stance that may distort trade. This is an impact of sanitary standards on QFP trade and marketing that is a result and elaboration from the distortion of trade terms. When the agri-business enterprise focuses on their policy to implement higher standards to increase protection of health and safety, the limit of what is reasonable and what is an over-burden is questionable as is the use of the system and the Codex benchmarks, this justification is argued by many economists as one of potential protective natures and has provides a close relative relationship of sanitary measures to new protectionist measures, cf. Elci (2007) and Non-Tariff Barriers (NTBs), cf. Anderson and Tyers (1991); Baldwin (1970); Henson and Loader (2000); Mahé (1997); and Maskus, Wilson and Otsuki (2001). The cost of taking a higher compliance measure is a barrier to trade, cf. Roberts, Josling and Orden (1999). Roberts, Josling and Orden (1999) proposed the protectionist framework that identified an analytical impact of effects with compliance requirements of sanitary measures; however, this is only useful for the SPS quantification. By expanding it to include more variables it is capable to assess IPR, SPS and QFP. The framework here within draws attention to the affect of compliance within connection to a framework designed here to make connections with QFP. This means that the use of higher sanitary measures is implemented in order to provide higher quality food products. Therefore, integrating an analytical framework with the marketing aspect of quality food production and increasing consumer well-being and welfare. The link between QFP and sanitary measures can be drawn under a sanitary regulatory protection that is to increase the domestic supply and enforce compliance. This can be broken-down in two categories, the supply-shift of QFP, which pushes the production from High-QFP/Low-Standards to Medium-QFP/High-Standards (*see figure 1*). The second category is the demand-shift of QFP, which is the consumer aspect of welfare enhancement that is implemented through establishing a consumer behaviour marketing confidence, through the flow of information in order to increase consumer demand as the business enterprise conforms with QFP production in the food production supply chain. The supply and demand-shift of QFP framework is illustrated in figure 1 and figure 2 respectively.

The impacts of the supply and demand-shift of QFP are well maintained in performing a maximisation strategy for which QFP is improved for particular benefits. In the supply aspect (*see figure 1*) SPS is used to increase standards as a protectionist measure, therefore, the optimal regulatory marketing scope would be at the extreme level D (*see figure 1*) standards, creating a QFP combination (Low-QFP/High-Standards).

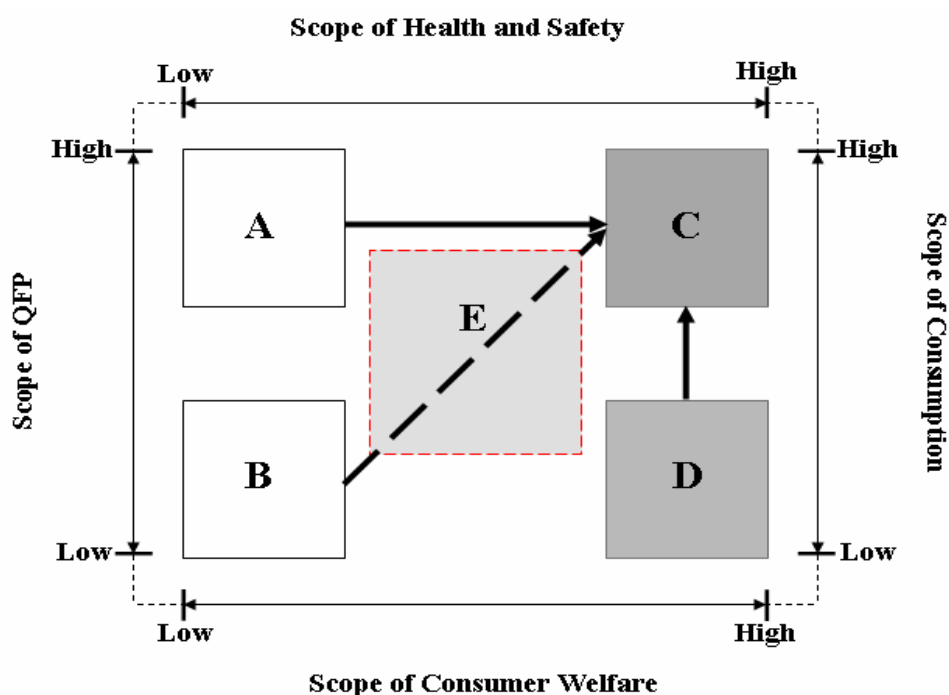
Figure 1. Supply-shift Scope of QFP link to SPS standards



However, there is a limit to the level that QFP can drop before consumption would point the affect. This is the marketable quality level (Qm), therefore any regulatory restriction for supplies to have high standards would mean a shift from High-QFP to Medium-QFP and a horizontal shift to High-SPS standards, which results in a higher scope of protection and a Medium scope level of consumption at F. The above cause affect paradigm is a development framework with a quad-paradigm to evaluate the link between QFP and SPS measures as a supply-side marketable framework. The cause affect creates a dynamic supply-shift, which means the higher standards provide a marketable QFP that can be marketed on all markets as acceptable, controlling the spillover impact. Also the high standards benefit the trade imbalances perceived by nations. The polices are welfare declining to a

certain limit as QFP declines and as a result free trade is restricted to a higher level. However, because of costs the QFP are unable to increase to an efficient and welfare enhancement point to provide an increase in health and safety welfare level. The spillovers related to these compliance levels for domestic producers are increased through market access and competition in pricing and lower production costs as sanitary requirements are met, in response to the quad scopes, it sets out an interconnectivity framework which creates a high probability QFM that can be adapted to the agri-business and governmental policies dealing with SPS standards, QFP and QFM. In accordance with the supply-shift the demand-shift cause affect paradigm develops the scope of the consumer welfare behaviour. The demand-shift derives a greater optimal platform with High-QFP/High-Health and Safety Standards, which the combination provides High-Consumer Welfare and therefore High-Consumption patterns at point C (see figure 2). This cause affect is the eventual result of all advancements in scope and overtime as the progression routes show in figure 2.

Figure 2. Demand-shift Scope of QFP link to Consumer Welfare



However, the demand and supply shifts need to be evaluated in terms of exporters and target countries and consumers for more accuracy. The aspects drawn from compliance of regulatory measures are able to identify the costs and volume of

distortion to trade. The costs are illustrated as the needs of changes in the QFP supply chain with restructuring of facilities and equipment.

The problems and distortive facts of these measures are that many small domestic producers are just unable to implement new infrastructures to work with these new standards. The QFP market has been adversely affected by protectionism, as nations protect their own food markets from QFP imports, cf. Anderson (1996); Anderson and Blackhurst (1993); Anderson and Josling (2005); De Rosa (1995); GATT (1991); Harrold (1995); Thornsbury *et al.* (1999); and Wilson *et al.* (2005). The sanitary protection is used to a level so QFP is within reasonable consumer welfare, which is crucial to the marketing appeal of QFP. Most nations, developing and developed protect their QFP market for similar reasons. However, another factor in the past fifty years has been the lobbying power of the Agri-business enterprise in developed nations that use their influence to secure high levels of sanitary protection.

3. Link between Quality Food Products and Intellectual Property Rights

The TRIPS Agreement stipulated minimum standards for protection of intellectual property rights. The Agreement covers a wide aspect of intellectual properties, knowledge and protection for benefit and enhancement of recovering production costs. Furthermore, the process encourages innovation and entrepreneurship. These are all important aspects for the creation of QFP, to provide a distinguishing product with the quality that is required in a field that must increase welfare and health and safety aspects of the well-being. The provisions that IPR imposes are a minimum protection, similar to sanitary measure polices. The IPR allows members the freedom to determine the appropriate method and level of provision and legality in the property rights. The advancement of the food industry has progressed with intellectual patents covering technology, organic products and the involvement of the pharmaceutical agri-business enterprise. Intellectual property rights (patents) have become essential in the agri-business for the advancement in quality food products and the supply chain.

The use of intellectual property rights is a consumer concept tool for the agri-business enterprise that creates and covers a wide marketing framework in the development of QFP as IPR are able to create a health and safety image in the

applications and the management and conservation of such resources, this eventually will lead to protection by patents in an economic, commercial and cultural development environment. The patenting of living organisms, pesticides and technology that establishes the foundation of SPS residuals and grant rights to multinational business enterprises, with vast benefits are usually at the expense of local communities, as patents and QFP standards work collectively. What the interconnectivity creates is that only the rich with legal patent protection structuring, has the ability to cross borders freely and implement high sanitary standards that are scarcely used in other parts of the world. Therefore, the intellectual rights, transfers the sanitary impact and assists the disguising of SPS measures as protectionist tools. This provides the possibility of implementing more highly technical WTO agreements, like sanitary and phytosanitary measures without the threat of the dispute mechanisms penalties. However the controversy is the argument that patents are a form of protection that should not be allowed to cover life-forms, biological and human consumption food products, cf. Henson (1997); Henson and Loader (2000); Jonker, Ito and Fujishima (2004); Lamb, Velez and Barclay (2004); Manarungsan *et al.* (2004); and Messerlin (2001).

To implement IPR and SPS standards with regards to QFP, the market needs to have a sustainable frontier, taking into account the environmental impact and have a sustainable QFP business enterprise that has knowledge of indigenous consumer consumption needs of QFP. Therefore, there is a need for openness, transparency and due diligence to facilitate the increase of high QFP. Furthermore, the harmonisation of SPS measures and procedures are essential to quality food production. The simplification of intellectual rights would provide the avoidance of unnecessary restrictiveness of QFP. This is achievable by minimising documentation and procedural requirements. Providing an alternative costing structure to open innovation and high welfare with lower compliance costs.

The scope and coverage of sanitary measures are points of evaluation in the establishment of benchmark coverage ratios. With IPR, these sanitary measures are capable of widening the scope of coverage as one includes more entities that reduce the threshold of sanitary measures being used as protectionist measures. The coverage ratio with an interconnectivity framework provides a basis of increasing standards with innovation and development, because of compliance and recovery requirements. These recovery requirements take the form of promoting innovation in QFP with a non-discriminatory treatment, for the Agri-business

enterprise. This is an integral part of promoting higher consumer welfare and well-being, through higher QFP. The uses of intellectual property recovery policies are helpful in the qualification of supplies and the selection of standards as such policies provide the conditions that encourage local development, or improve a countries balance-of-payments account within the Agri-business industry. This is the requirement, for future development, patents, licensing standards and investment in QFP research. This creates a sense of transparency that interconnects such requirements for QFP development and improves associated QFP standards of sanitary nature.

The interconnectivity of the SPS regulatory framework and Trade Related Intellectual Property Rights (TRIPS), presents various challenges and opportunities in the marketing and expansion of QFP in the international trade atmosphere. The Codex Alimentarius plays an important role in the interconnectivity of SPS and IPR, it can be said it's becoming the basic patent setters of the Agri-business as the Codex develops benchmarks for QFP. However, with innovation of scientific and technological advances, these sanitary standards are changeable with innovative IPR that advance the industry, the marketing and the development of QFP.

5. The Intellectual Property Gap Theory of Trade and Marketing

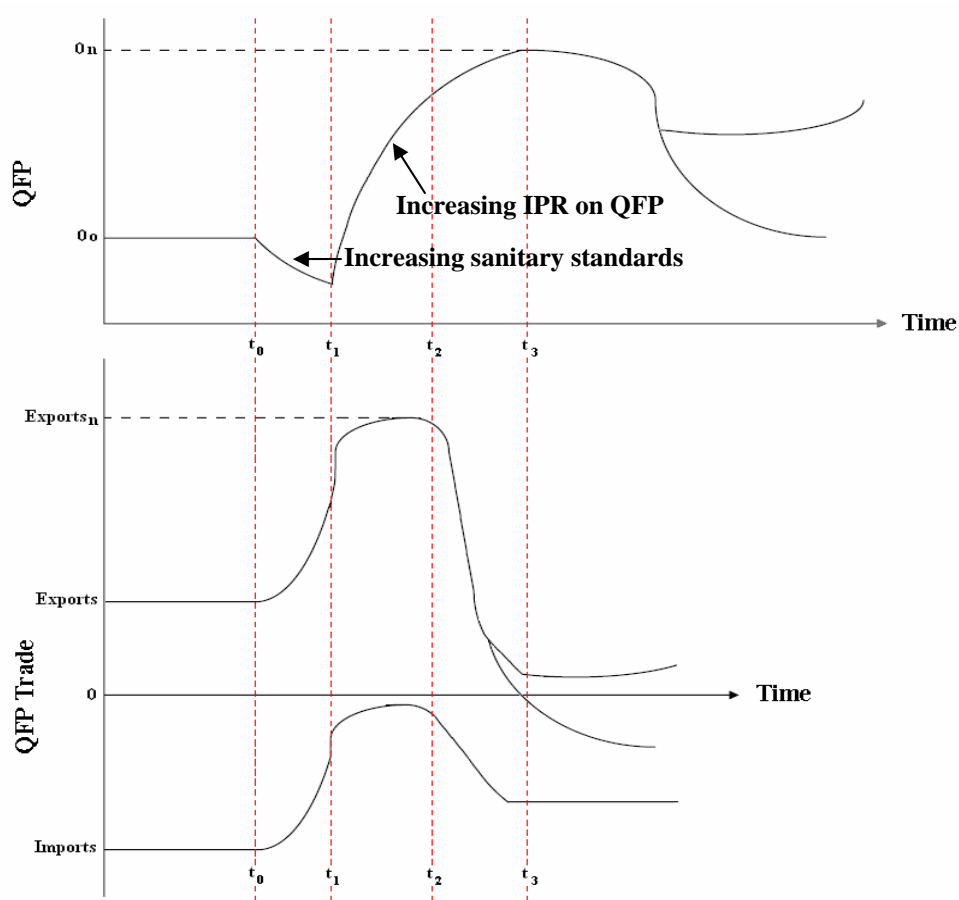
It is unconventional to merely adapt a neo-classical ideology to incorporate intellectual property rights; this will fail to take into account the dynamics of intellectual property protection and creative aspiration. This essentially takes place through both innovation and intervention. The use of intellectual rights can give a nation a comparative advantage; cf. Ricardo (1819), in a particular QFP. However, overtime this comparative advantage and knowledge created in these QFP, can become available to producers in other countries. This means that the comparative advantage may shift from the innovating intellectual property nation to another nation where production costs are lower. The impact can only be explained in a dynamic model of trade, where the interconnectivity of intellectual rights with sanitary measures can explain the closing of the gap for trade and marketing of QFP. A similar model was attempted for technological innovation, cf. Posner (1961). Posner's model showed the effects of technological innovation on a country's trade flows overtime. However, here in this framework the gap created by innovation is poised as the innovation of new approaches to QFP and IPR, as the

impact of intellectual innovation is considerable the point of interconnectivity of quality food production and coinciding with the recommended standards for consumer welfare protection and enhancement. This is the basis of the framework as it states the process for consideration in innovation and discovery of new methods of producing QFP, in a particular market or country, which gives the agri-producers a cost advantage over other agri-producers in the international QFP market. The comparative advantage is gained by the integration/incorporation of IPR and SPS standards requirements to create time lags that are identified as either:

1. Reaction lags – for which Agri-producers gain a cost advantage through innovative protection and then competitors, seek a response.
2. Imitation lags – which occurs as Agri-producers, benchmark Codex standards and copy the QFP innovation, with a number of complications and improvements made as QFP are harmonised as transparency is created. This results in more efficient QFP and Quality Food Marketing (QFM).

Following the innovation, and the patent of the research and QFP, imports decrease and exports rise as the intellectual rights create a net exporter opportunity. This surplus of QFP lasts for as long as it takes for other agri-producers to copy the patent idea, considering the length of the reaction and imitation lags. This can be either, once the innovation is further improved by standards or sustainable practices are created, in these cases exports will eventually fall, or once maturity of the IPR is reached. Therefore increasing imports and the trade surplus will disappear as illustrated below, (*see figure 4*).

Figure 4. Intellectual Property Gap Theory of Trade



The intellectual property gap is created by the initial Codex standards implementation. As a result, imports decrease and exports increase between the period t_0 to t_1 , during this period with higher standards that require compliance and therefore raise costs. This further increases as intellectual property rights are granted, allows for an artificial escalation of exports, as the QFP becomes a vital export source for quality food production. This is seen between the periods t_1 to t_2 . However, due to either maturity of the IPR or the reaction lag, quality food production will become limited at Q_n as an imitation lag follows. However, the time length depends on the competitive nature of the agri-business industry and the complexity of the IPR granted. For instance a geographical patent may take longer to reach any reaction or imitation stage. Furthermore, the effectiveness of the patent laws and institutional arrangements are important. However, if the process reaches t_3 and beyond the exports will steadily decrease as imports steadily rise. However, this process may never take place, if the innovating agri-business

enterprise interconnects IPR and SPS measures for a continuous succession of innovation and advancement in standards, which will further lower the costs of quality food production, in comparison to competitors. This is a greater probability with the interconnectivity of IPR and SPS on quality food production. This is the case with the EU that is a major standards setter for Codex benchmarks.

6. *The Cost-Benefit of interconnectivity of IPR and SPS on QFP*

The impact of the interconnectivity of IPR and SPS measures on QFP are subdivided into two categories. The first are the gains from amalgamation of standards and intellectual patents, which creates a scope for an increase in QFP within the QFM. The second is the cost associated to the amalgamation of standards and intellectual patents through the necessity of compliance policy, in creating scope for an artificial protective increase in QFP for a gain in the QFM.

The benefits of the interconnectivity can be seen through economies of scale, in QFP and the creation of consumer demand consumption for high QFP, with a vital health and safety aspect of standards, which as a consequence enlarges the size of the QFM as consumers become more self-conscious, in the quality of their food produce that takes into consideration the hygiene and sanitary requirements set by SPS standards. The interconnect also increases consumer choice as the QFP system is associated to social habits and tastes of consumer's which therefore, increases the market demand for quality and QFP alternatives.

The interconnectivity is connected in the cause affect paradigm, which provides spillovers as the impact of IPR and SPS cohesion increases the scope to high ends. This means increased QFM, consumption, welfare and health and safety. Which increases the competitive market structure as innovation is analyzed in connection with demand-side welfare enhancement. This is created by the differentiation that IPR and SPS provide as a result of heightened regulations and standards. In consideration the integration provides synergies and improves coordination, which provides a harmonisation and commonality of QFP between countries, which only takes place with the enhancement and integration of IPR and SPS.

In considering the cost and benefits of interconnectivity the point that is obvious is the restructuring of the argi-business enterprise. The change is, in the direction to sustain trade levels while adopting wider IPR and SPS measures. The consequence is more competition and more specialisation, as the IPR provides patent protection for specialised QFP and as a result of SPS compliance, which is expensive, the restructuring favours the connection of SPS standards and IPR as product choice diminishes with a high scope. However on the other hand this is a cost as well, as it affects the argi-business, in a detrimental way as the specialisation creates lower competition and therefore QFP producers compete for the same scarce resources, which increases production costs as the sector changes its supply chain by restructuring its specialisation facilities and equipment to become competitive again.

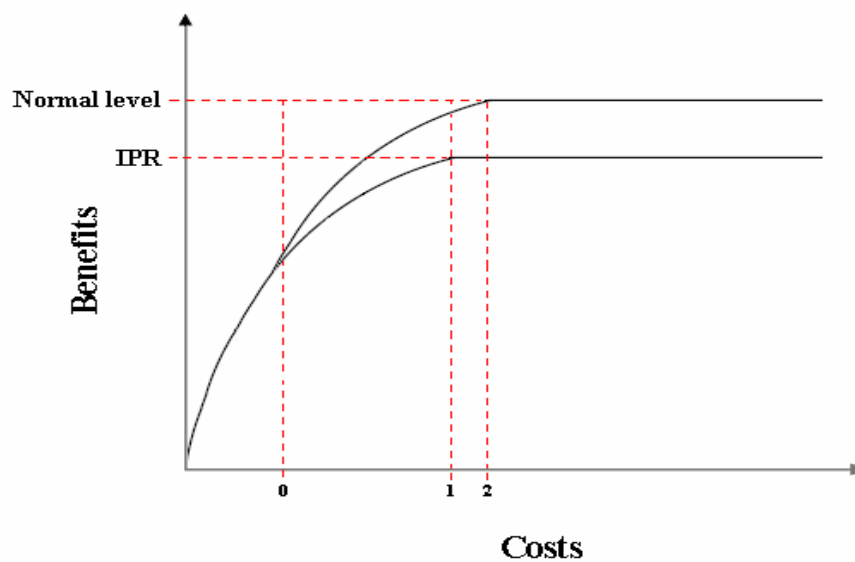
The misallocation of QFP resources is a significant cost to the interconnectivity of IPR and SPS, which inevitably distorts trade and consumer well-being and welfare. The use of IPR and SPS measures are evaluated to encourage competition and trade, through innovation and technical advancement. However, standards are also cost provocative in increasing costs and pushing out competition through the patent protection of IPR, this leads to the misallocation of resources, the divergence of standards for personal benefits as it provides a complex variety in standards as IPR differs for compliance and maturity, which creates an artificial protective barrier.

As a result the costs of interconnection/integration of intellectual rights and sanitary standards, lead to increased overhead costs from the impact of certification and intellectual rights documentation and compliance for other argi-producers. The interconnection and enhancement of standards necessitates a technological change, which is implemented by intellectual development, this is the main problem of compliance.

The majority of the QFP market is perceived to have compliance problems with SPS and intellectual property rights, these measures are major barriers to imports and expand exports as they benefit from compliance of international Codex standards that provide access to other argi-markets. This increases the market size and provides potential economies of scale. However, continual compliance is rather another problem that in a specific scope would result in considerable costs that will result in diseconomies of scale of trade (*see figure 5*). Nevertheless, as

illustrated in the cost and benefit framework (see figure 5), which states that with the establishment of Codex benchmarks any increase in standards would lead to a proportionate increase in cost and benefits in relation to the standards. If the benchmarks standards are conformed to the compliance, it would result in benefits to the point of the normal level, but would eventually their will be a slowdown in benefits and it would come to a level of exhausting any further benefits and have only an increasing cost function at point 2.

Figure 5. Cost-Benefit approach of interconnectivity of IPR and SPS



However, with the inclusion/interconnection of IPR the results are higher costs from point 0 onwards as the IPR restricts the benefits and exhausts the opportunities faster, as benefits become less proportionate to the costs reaching a level of increasing costs faster at point 1 onwards. Therefore, the cost-benefit framework states that the interconnection has a contribution of cost and benefits and the implementation of IPR and SPS proportionately increase the benefits, however, after assessment the interconnection provides an estimate of indirect and direct contributions to the measurement of the affect of regulations.

8. Conclusion

The consequence of changing food production levels, to provide sustainable levels in the adoption of SPS measures is less competition, more specialisation and product protection and differentiation through intellectual property rights. This can be seen as patents establish higher compliance costs with regulatory standard requirements for international trade in QFP.

As a result, the enhancements of standards have been the outcome of IPR protection, resulting in longer unemployment, compounding inequality, marginality and cultural discomfort. The costs of compliance of SPS measures affected by IPR, result in the opposite flow of benefits from consumers to producers and therefore lead to a large social cost, even if the harmonisation of standards provide convergence to an ideal information transfer system.

As illustrated, the framework identifies the existence of a link between intellectual property rights and the establishment of QFP standards set under SPS measures. The link between international development and the role of intellectual property rights does result in the increased trade of QFP that meet the SPS requirements, specified under the harmonisation and transparency of food regulations and due process. This explains the main challenges for the SPS agreement that includes the capacity for participation in standard setting and implementation, therefore protectionism by the business enterprises means higher compliance costs. Therefore, to maintain compliance costs in maintenance of maximising efficiency and exposure to the need for quality standards for the protection of consumer well-being. This means it is essential to interface the scope of standards with the affects of IPR. This provides a high-valued product with two fixed pre-requirements of IPR and SPS, which as a result provides the basic framework for the interconnectivity of these fixed facts, in order to obtain QFP. However, the cost is intense so the loss of obtaining a viable efficient economic agri-business enterprise to implement such compliance will be vastly affected in a costing structure. Hence, this is the challenges that arise by using intellectual property rights, which establish compulsory licenses and patent rights, with geographical indications, and developing measures to cover traditional knowledge.

However, this can be further established by the means of correlating standards to specific quality food products and the protection of these standards through these products, is therefore maintained in the individual intellectual property rights. This is because the production of QFP requires large research and development costs

and the business enterprise views the need for intellectual property rights for it to continue this expansion of quality production through standards. Hence, the development of international trade of QFP is affected by the principles of patents, the knowledge base, in the implementation of food processing applications and the management and conservation of such resources, which leads to protection by patents in an economic, commercial and cultural development environment.

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