



# THE AFTERMATH OF CORONAVIRUS CRISIS AND LESSONS FOR THE AGRI-SECTOR

**T**he Coronavirus crisis brings with it fear, morbidity, and considerable worldwide economic damage. The purpose of this write-up is to present reality as it is, and in particular to illuminate the foreseeable future with its business risks and opportunities so that the agri-sector can take advantage of it

## **Economics**

The expected worldwide cost of the Coronavirus crisis is nearly \$3 trillion.





## ABOUT THE AUTHOR

Dr. Nimrod Israely is the founder and CEO of Biofeed. He is a leader in developing technologies to help farmers grow without insecticide sprays, and protocols for fresh produce exports, to enable smooth global trading free of quarantine pests and chemical residues

By comparison, the economic long-term worldwide effect of the 9/11 attack is estimated to be \$ 2 trillion. There is no question that this economics will have a long-lasting effect on our lives, business, trade, regulations, economic development, etc. How will it affect the agri-industry, and more specifically, the fresh produce exports from Africa and elsewhere to premium markets?

### Regulations make the World go round, or stop!

Regulators control the world's international trade. When there is a health/trade risk by a virus, a germ, a fungus or a pest, the Regulator will protect us and keep our future safe by prohibiting people and goods movement. This is true for times when the Regulator is fighting to prevent the entry of human virus carriers (e.g. Coronavirus) or agricultural quarantine pests.

Regulators know it well - unless you have an effective vaccination or pest control method, your best alternative to fight an epidemic or an invasive pest is through quarantine or Import Ban of any source of danger, be it people or agri-produce.

### Coronavirus is the September 11 of worldwide bio-security

On September 11, 2001, terrorists intentionally created horror, death, and economic damage. That changed our view of homeland security. On the Coronavirus crises – travelers unintentionally created horror, death, and worldwide large scale economic damage. Will that change our view of bio-security and the ways to cope with it? Will we see a Minister of Bio-Security? Maybe.

The Coronavirus crisis gives us a glimpse into the future of international trade and freedom of movement of people and goods. One can expect that future international

flights and trade in fresh produce will have stricter restrictions. How do we prepare, and thrive, in the coming turbulent future we are facing?

The steps forward should be in the following order - analyzing the situation, creating high probability scenarios, and

predictions. Next – setting goals, targets and a work plan of achieving it. Last – the implementation of the work plan.

### The Coronavirus of Agriculture

“*Bactrocera dorsalis* is a highly invasive species” affecting “over 300 species of commercial/edible and wild hosts... is now found in at least 65 countries, including parts of America and Oceania, and Africa sub-Saharan countries...”

“The potential risk of its introduction to a new area is facilitated by increasing international tourism and trade... After introduction, it can easily disperse as it has a high reproductive potential... a rapid, dispersal, ability and a broad host range.”

“The economic impact would result primarily from the loss of the export markets,

and the costly requirement of quarantine restrictions and eradication measures.”  
- Commonwealth Agricultural Bureaux International (CABI)

It is clear – *Bactrocera dorsalis* is not an ordinary pest. It affects the economics of fruit and vegetable growers, more than any other pest. It is the number one fruit pest in the world and the most invasive. Hence, it is on the top list of national and international quarantine organizations.

### Dangerous resemblance

Coronavirus for humans = *Bactrocera dorsalis* for fruits/vegetables. Coronavirus is transferred by humans that on average transfer to two others. *Bactrocera dorsalis* infection is transferred (i.e. reproduced) by



each female fly to tens of fruits.

### Regulation is the King

CORONAVIRUS - All countries first hesitated how to deal with the Coronavirus, but later realized that the best immediate action is: isolation and quarantine of any potential source of Coronavirus carriers.

FRUIT FLIES - are already subject to massive regulations, including export ban and severe quarantine requirements. These regulations are known to be somehow “flexible”. They allow export to continue even after repeated interceptions of produce infested by the quarantine pest. Hence fruit flies, and especially *Bactrocera dorsalis*, continue to expand to ‘new’ territories and bring enormous destruction wherever it arrives.

## Forecast

In light of the Coronavirus crises, one can expect that quarantine regulations will be imposed on any person, produce or goods that may pose a hazard to the introduction of invasive disease or pest. Agriculture is no exception to the rule. Regulators active in the agri-sector will eventually decide or forced to adopt a stricter line of quarantine.

## Zero Tolerance

Like zero tolerance for the spread of infection among humans, Plant Protection and Inspection Services authorities are expected to adopt a stringent and stricter regulation, especially for imported fresh produce. Future bio-security inspections will be more diligent and approach towards non-compliance will be far less forgiving.

## Future losers

For one or two years following the crisis, one can expect to see a decline of the World Bank investments in developing countries, and the same trend with other banks and donors. Markets may shrink, as people will have less available money. Hence, the competition between exporters and fruit traders will be fierce.

It will take a while, but Investigative Committees will be established in many countries. They will probably recommend preventative measures to avoid future disastrous cases, e.g. Coronavirus of bio-security. It is clear that anyone who will be unable to meet future regulations will find himself outside the international trading market.

Those are very bad news for countries that today are unable to adequately control fruit flies and/or other quarantine pests. Unfortunately, for such countries, they may find themselves under strict Export Ban in a short while.

## Impact

Premium markets of developed countries such as Europe, China, and the United States may place stringent quarantine requirements from exporting countries, including a demand to provide a continual proof of their ability to export fresh produce, which will be totally, and unquestionably, free of quarantine pests, in addition to the zero-chemical residues demand.

Characteristics	Coronavirus	<i>Bactrocera dorsalis</i>
<b>Endanger</b>	People	Fruit/vegetable crops
<b>Terminal</b>	1%-5% Death	30%-80% Infestation
<b>Expected duration</b>	1-2 years	Decades
<b>Spatial dispersion</b>	Global	Asia, Africa, America
<b>The intensity of infections (per country)</b>	> 0.01% (China)	100% of orchards having susceptible crops (Africa/Asia)
<b>Spreads</b>	exponential *	exponential *
<b>Exclusion</b>	The entire population	Export ban (per crop)
<b>Economic damage</b>	Billions USD	Billions USD

## Future Winners

As usual, any problem like the Coronavirus crisis will also create opportunities and winners. Opportunities take place where there is change. The Coronavirus crises bring about a huge change in all aspects of our life. This change will probably affect international business and trade for decades to come! Among others, it will create opportunities for disruptive business structures, technological solutions, protocols, and channels.

One of the measures will include demand for "Prohibition of entry to the country of people, and fresh produce unless there are evidence and a certificate showing that they are not carrying any quarantine disease/pest".

Winners – will become those who will be able to provide a certificate of bio-security i.e. free of quarantine pests, free of chemical residues, and have the top-quality produce. They will gain smooth entry to the International Premium Markets and get a high price – reward of their efforts.

## Beneficiaries

Who will benefit from the coming changes? Anyone who will understand the opportunities that this unfortunate situation brings with it can benefit. The beneficiaries shall include agri-tech companies that will provide education and field-proven technological solutions for the strict regulatory requirements. Also, those service and know-how providers will gain who will provide adequate protocols accepted by the regulatory authorities in the premium markets; have the ability to implement such protocols and provide certification for standing up for the required demands.

Those countries shall gain which shall create the environment to grow and export fresh produce free of quarantine pests, will

actively support chosen pest control services providers that can assure the export quality of the produce, will provide the importing countries the trust, reliability, and comfort they need to enable an uninterrupted, continuous export. The attempt to certify the entire state as Free of Quarantine Pests is doomed to failure. It is therefore advised to start by certifying limited area/s as free of the main quarantine pest, e.g. Fruit Fly Certified Trade Zone.

## Farmers

Those who qualify for inclusion in the Certified Trade Zone initiative will gain access to export markets and therefore will significantly increase their income.

## Fruit-fly certified trade zone

Fruit flies are the number one reason for the inability to export fresh produce. Therefore, the focus should be on enabling farmers to export without the fear of fruit fly interception. That move will create the highest and fastest return on investment (ROI) for stakeholders and will bring prosperity and economic success.

Countries that will overcome the regulatory hurdle will soon turn into export centers for high-quality produce. Those export centers will expand and in the future will provide much of the global demand of a specific crop/s.

Inter-dependency and cooperation between countries is a proper direction that will encourage multi-national cooperation to invest and will decrease the tendency of armed wars or trade wars or any other kind of conflict between countries. We will see more economic international cooperation, and dependency, which in turn will bring more peace and prosperity to all.