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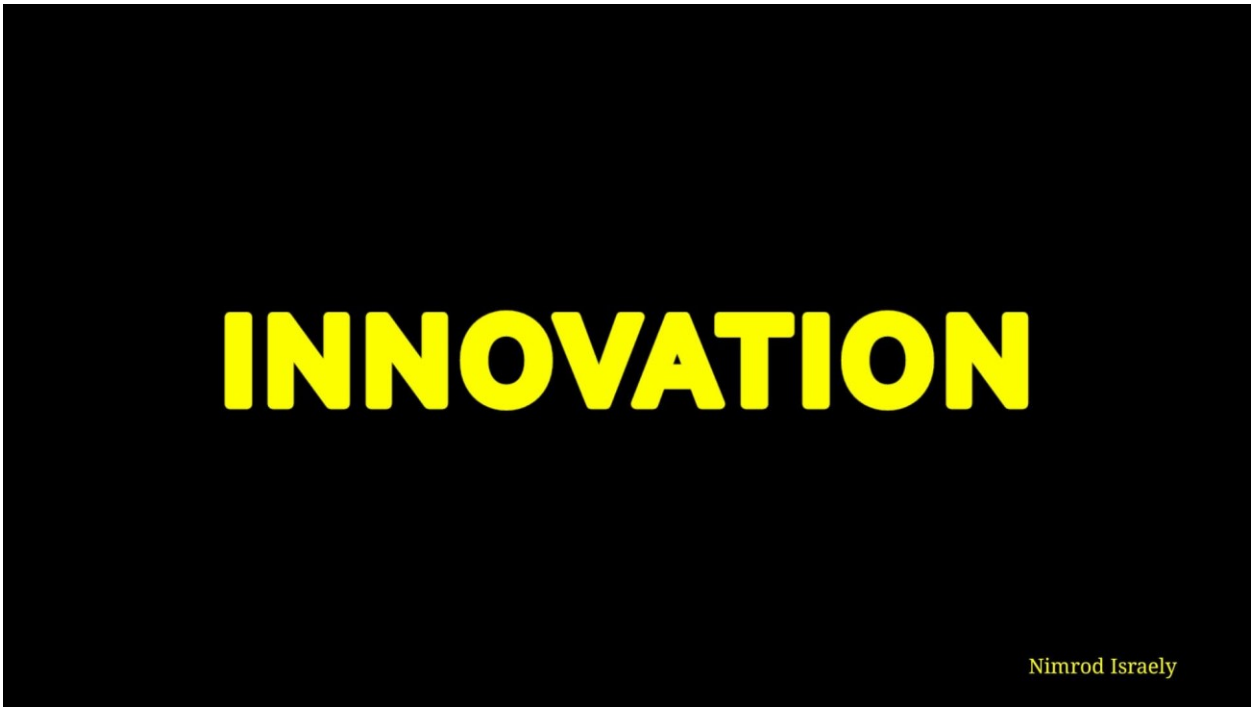


WHICH OF THE THREE TYPES OF INNOVATION DO SMALLHOLDERS NEED?

"On the way to your goal, ensure you don't take the easy way just because it's easy, even if wrong."

When I look back, I see Nimrod, the child, and then the young man, who kept his mind busy, thinking, *how can I do it better, r*egarding anything he was doing or cared about.

The "it" constantly changed, but I kept looking to improve things, as reflected in the three stories below, which I wish to share with you.

"Doing better" is what we call today "innovation," a way of bringing benefit by creating added value through something that surpasses the existing or the competition.

Professor Clayton Christensen (HBS) coined the term ***Disruptive Innovation***, which relates to a novel business model that creates a new market or value chain using technology.

There are three types of innovation, according to Prof. Christensen -

1) Disruptive Innovation/Market-creating Innovation.

Every business starts small, but "*Disrupters tend to focus on getting the business model, rather than merely the product, just right.*" It **creates** jobs. Suggested read.

2) Sustaining Innovation/Performance-Improving Innovation.

It aims to improve the current product offering. It **preserves** existing jobs.

3) Efficiency Innovation.

It aims to do more with less via cost saving. It **reduces** jobs.

For more information.

Before we continue, let me ask you:

What is the least common innovation type in developed economies?

What is the essential type of innovation for underdeveloped economies?

Which of the three types of innovation do we need to deal with the 17 UN SDGs?

Now, allow me to share with you three tales involving innovation in the fields of Technology, Business Models, and Social awareness; all are related to Global Challenges and the UN SDGs values.

A TALE OF TECHNOLOGY

It was in 1988 when I accepted responsibility for managing pest control in a mixed deciduous orchard of; apples, peaches, nectarines, cherries, pears, and walnuts.

The yield was high and valuable, about $50,000 per hectare, which I had to protect using a fleet of tractors, sprayers, and a long list of pesticides.

Fortunately, at the beginning of 1989, we transformed from prophylactic pest control (spraying before there is a problem) to Integrated Pest Management (IPM), where we spray when there is a problem.

A seemingly small change ended up using less than 50% of the sprays, those without an increase in pest infestation.

It shocked me - 50% fewer sprays (no new chemical or machinery used), only thanks to improved knowledge and "how to do" methods!

I asked myself, how many more sprays could I reduce if I had more knowledge and/or better technology, tools, and method?

Then, in 1991, we added organic orchards to conventional ones. The change appeared by adding three more shelves with "organic pesticides" in the warehouse.

With time I became an expert in low-volume pesticide sprays. I gave lectures to other farmers on how they could save time and money by using the technique and knowledge I was using and enhancing daily.

Simultaneously, I notice that -

(a) Even after reducing the number of sprays, I still sprayed tens of sprays per hectare.

(b) There is little difference in the pest control regime between Organic and Conventional orchards, though pesticides are often different, and

(c) Pest control results were about the same in the Conventional vs. Organic orchards.

Those and other Red Flags shocked my blind belief in "the system" and "the experts" and made me question my overall approach to crop protection.

As the crop protection officer and a person searching for answers to many open questions, I asked myself, "*Nimrod, what do you want?*"

Note. I didn't ask myself, "What is possible" but "what do I want." Looking back, I was pretty sure I would be able to develop a suitable technology once I understood what it should deliver. Hence, I didn't start by asking, "How will I..."

The answer came fast, and it **wasn't** about, "I want a less costly or less poisonous pesticide/sprays, or better tractors and prayers." Not at all!

My answer was clear - "***I want agriculture without sprays"*** **–** simple as that!

"I want crop protection that is harmless to farmers and the environment, one that even without sprays will be as effective, creating added value and improved livelihood for farmers."

In 1994 there were no UN SDGs; I simply wanted to improve people's lives.

Question;

Which of the three innovation types could help me answer my call?

Nothing, even remotely close to my wish, desire, or dream, was available in 1994, so I was left with one option – do-it-yourself (DIY).

Since there was no point in trying to solve all pest control problems at the same time, I decided to start with the **most significant group of pests**, the most important in terms of % damage, the number of sprays, host crops, impact on trading and export, etc., are – **Fruit Flies**.

Going forward, six years later, I established a small company, later named Biofeed, whose goal was to develop and manufacture non-spray non-environment polluting crop protection solutions. This aimed to replace the need and the common usage of pesticide sprays.

Biofeed introduced Israeli farmers to the option of practical crop protection without pesticide sprays. You can imagine that agrochemical companies didn't like it.

In 2015, Biofeed solution won the *Grand Challenges Israel* competition, presenting a **zero-spray pest control solution** for India's #1 pest, the fruit fly *Bactrocera dorsalis*, causing 30%-80% fruit loss to India's #1 crop, mango.

The result (in 2017) was the announcement of the commercial availability of the Freedome, the fruit fly management solution, which reduced mango growers' pesticide sprays by 100% and fruit infestation by ≈ 99%.

As an electric light bulb is not "a better candle," so is the *Freedome* not "a better pesticide **spray." *Freedome* is a new category of pest control type of solutions.**

Question.

From the three types of innovation, which type do you think Biofeed used to bring this change?

A TALE OF BUSINESS MODEL

Biofeed was active in Israel for 17 years, in 30 crops and hundreds of varieties before arriving in India.

However, the meeting with Indian PMs Modi and Israel PM Netanyahu created high-level media exposure and broadly published the free-of-spray pest control option for mainstream agriculture.

AVI DODI PHOTOGRAPHER

PM's Modi and Netanyahu Launch Israeli Novel Solutions

Published on July 12, 2017 Edit article | View stats

While presenting the solution, I thought of the millions of farmers whose livelihood depends on mangos and how now, thanks to *Freedome*, they can have higher mango quality and increased marketable yield. This translates to increase income, better livelihood, and a chance to escape poverty.

Then came a meeting with the Togolese mango grower, Yacuobuo. It came after a direct Presidential invitation from the President of Togo to arrive and help Togo's farmers, which were suffering 80% fruit loss in their mango orchards.

H.E. Faure Essozimna Gnassingbé Eyadéma

The work in Togo was done in collaboration with the Ministry of Agriculture and Kara Agriculture University.

Yacuobuo was one of many farmers who took part in this project. Like the other farmers, I interviewed Yacuobuo as the project shifted from one stage to the next. Yacuobuo's English was good, making communication easy, and he knew his fields, numbers, and situation.

Thanks to Biofeed's work at Yacuobuo's orchard, Yacuobuo had 97% (!) less infested fruits, and annual income from three hectares increased by 666%! (**YES 666%**), from CFA 15K (22$) to CFA 100K (150$). Video link

Yacuobuo was in poverty when I met him for the first time. Yet, to my surprise, even after I helped him increase his income by 666%, he still remained in poverty!

I asked myself, how is that possible?

What can I do differently to change this unfortunate result?

I found the answer when I learned that Yacuobuo sells his mangos at the local market for a couple of cents per kg.

It is common for smallholders to sell their produce at a price 50% to 95% lower than they could fetch if trading it in premium markets.

Think of it, how can a farmer escape poverty when he sells his mangos for $ 0.03 per kg instead of $ 0.3 per kg?

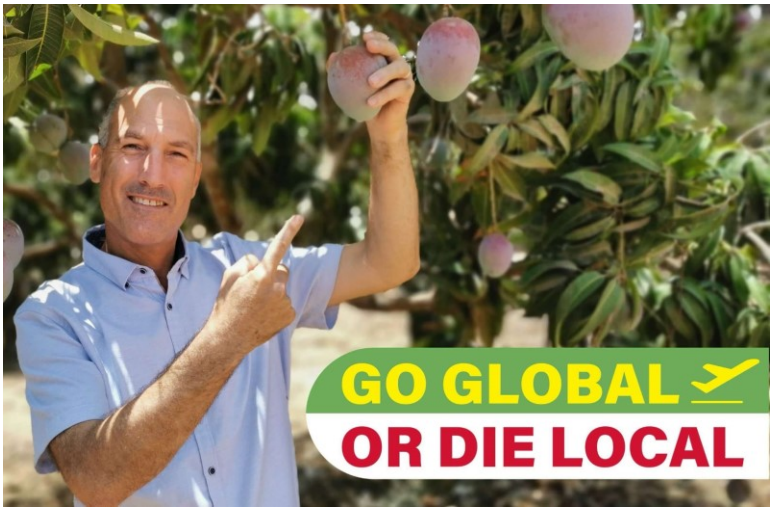
It took me a while to understand that the smallholders I worked with in India and Africa increased the quality of their produce and marketable quantity. Still, they continued to sell in low-price markets, getting no premium market price for their premium crop.

Hence, they remained still in poverty, even if less, and will remain so until somehow they reach premium markets where they can fetch a premium price.

This was when I understood that to escape poverty, farmers must improve those three indicators all at once; the yield quality and quantity and the price per kg.

We must support farmers with a complete E2E (End-to-End) full-cycle support and business Package, which includes technologies and services to enable a continuous increase in produce Quality, Quantity, and Price per kg.

Often, but not always, the export markets can offer premium prices.



Once again, I stopped and asked, "*Nimrod, what do you want?*"

Then I answered myself a direct and clear answer,

“I am here to *create added value and improve the livelihood of those farmers*."

This direction set the stage for the foundation of Dream Valley. But at this moment, I wasn’t sure it was possible to enable poor farmers’ access to affordable top technologies, services, and premium markets, based on sound business principles. I mean, no one has done it before; it must be impossible!

Question.

From the three types of innovation, which type did I have to use to answer the above goal?

I invested the next 3.5 years in developing the Dream Valley novel conceptual business model dedicated to rapidly improving smallholders' situation in underdeveloped economies.

In 2021, Dream Valley conducted its first national-scale pilot of over 2,500 hectares in Senegal with hundreds of mango growers.

Within one season, hundreds of farmers/families doubled their income, and Senegal doubled its mango exports to Europe.

Dream Valley and its farmers successfully went through a complete process – from idea to result - showing that moving from poverty to economic prosperity **requires a combination of technology and an innovative, customized, advanced business model.**

A TALE OF PUBLIC AWARENESS

In June 2021, I was in Senegal already for three months, minding my own business running the Dream Valley pilot, when I got an email from Mr. Isaac Kagara asking me to lead an African conference about agriculture and technology.

I was thinking, "I don't know Isaac; after many years, I finally understand that technology (alone) is not the solution for poverty, hunger, etc., which contradicts everything people around me think, and probably Isaac too. I need to conserve my energy for other things rather than explain Isaac those basic facts (to me).

I sent a return email saying I don't think I fit this volunteering job description as I am;

not African, I do not consider myself an expert in the issues he is interested in. And I wouldn't set foot in any of the million conferences in their titled "AgroTech," so why should I consider leading one, as such conferences didn't help to improve smallholders' livelihood in the past 50 years!

Isaac didn't deter but, in response, asked me to suggest another, better topic.

I asked, "Any topic?"

And Isaac answered, "*Any topic you like*."

I said, "*I will think about it*," hoping Isaac would find someone else and forget about me.

Almost two months later, in one more video chat, I asked Isaac, "*what about a conference dedicated to business models in agriculture, with an emphasis on smallholders?"*

Nobody ever had a conference on such a topic, and I expected a capital letter NO answer. But instead, Isaac says, "*Okay, anything else?*"

I answer, "*Yes. We will dedicate the conference to the late Prof. Clayton Christianson, whose work was on innovation and business models*."

Again, Isaac replies, "*Okay*."

"And one more thing," I add, "*Smallholders problems are pretty much the same worldwide. Why don't we make the conference international, so we can all learn from each other?*"

And you know what Isaac said? "*Okay*."

This is the story of the birth of ***The International Conference On Business Models In Agriculture*** (IBMA). It will occur on March 27-29, 2023, in Kigali, Rwanda.

In most conferences, the main benefit begins as the conference start and ends with the conference's last presentation.

However, the case of the IBMA conference is already known that it is set to create a **Paradigm Shift** from the current belief that the future of smallholders, wherever they are, will be better if they only use more "sophisticated" technologies and chemicals.

The IBMA conference statement is as follows;

We respect and value technologies, but those without proper business models and E2E support are worthless as a supercomputer without software or programmer.

I learned it the hard way, arriving at the market with breakthrough technology, the *Freedome*, but without a dedicated business model that would enable reaching the goals I set.

Without the IBMA conference, who would talk about the dire need for dedicated business models for smallholders? Nobody openly did this in the past 100 years.

Even before the conference began, it had already changed the current mindset of: "*There are three ways to improve smallholders' livelihood – (1) technology, (2) technology, and (3) more technology*."

Eventually, leaders, stakeholders, decision-makers, CEOs, and investors started understanding that without proper dedicated business models, they would continue to sell nearly nothing to 97% of farmers, which are smallholders.

At the same time, without proper business models, farmers will remain in poverty, and food markets will miss the plentiful potential produce of higher quality. However, the E2E approach can bring the desired change to all involved.

Today, at this very moment, the situation is a Lose-Lose for farmers, agrotech companies, value chains, food markets, investors, governments, financial institutions, and others. BUT, thanks to the IBMA conference, we stand a chance to shift to a Win-Win scenario for all.

Question.

Which type of innovation does the IBMA conference wish to promote the most, and what type of innovation the conference represents in its name and goals?

IS SLOW CHANGE A VALID OPTION?

Think of Yacuobuo and how much it would help him if he had decreased his fruit infestation by 30% or increased his income by 30%.

Most companies, NGOs, and governments are delighted when they can present such a change in three years, yet, the tales told above show a magnitude in order decrease/increase. Yet, it still wasn't enough for Yacuobuo to escape poverty.

Most companies, NGOs, and governments use the kind of thinking that follows the lines of *Sustaining Innovation* or *Efficiency Innovation*, which aims to make current products or services better or less costly.

When I met Yacuobuo, he was spending $0.00 on crop protection; how much more can he save?

How much would it help Yacuobuo to have a pesticide spray that reduces infestation and fruit loss from 80% to 30%?

Do Africa, India, and other underdeveloped economies need "to save money," which they don't have, or improve the old solution? Or should they need to write a new book where different rules apply, enabling them to frog leap?

When we fight climate change, poverty, chemical residues, bio-security, etc., can we be satisfied with more of the same but at a lower price or, bit by bit, improved?

I have shared with you three tales, each dealing with a critical issue to the future of under-developed economies and maybe even the world.

After each tale, I asked you which type of innovation approach you think is needed to bring the desired giant change –

(1) Crop protection free of sprays,

(2) Shifting hundreds of millions of farmers from poverty to prosperity, and

(3) Educating the public about the novel concept of eradicating poverty by creating prosperity based on dedicated business models.

Did you answer *Disruptive Innovation* to each of my questions?

If so, then you are correct.

It is simply too long or impossible to solve the 17 UN SDGs and other global challenges using *Sustaining Innovation* or *Efficiency Innovation*. Doing so is doing more of the same, which we already know doesn't work.

Disruptive Innovation is our only hope for change before it's too late.

And then there is the question you should ask yourself, "*What does that have to do with me?*"

Maybe nothing, maybe everything. It depends if you view yourself as a living part of this place we call home, Earth.

With the immense challenges humanity faces, we should wonder if we have the moral right to mind our business and do nothing about global challenges, e.g., climate change, poverty, hunger, etc.

Well, we sure can stand with the majority and do nothing. But, I always found it more accelerating, inspiring, and motivating to be among those who lead and stand a chance to steer the boat to a safe harbor for a better future for all.

You know the saying, "*The best way to know the future is to create it*."

I invite you to create the future by stepping forward and being among those who lead.

I can't offer you to participate and impact in what I don't take part, but I can, and I do in those three mega disruptive opportunities:

- ☑ **Technology -** cooperate/invest with/in Biofeed.
- ☑ **Business Models -** cooperate/invest with/in Dream Valley.
- ☑ **Perform a Paradigm Shift –** at the IBMA conference.

Whatever you do, don't decide to do nothing (even by default of not deciding). Be alive, be part of the radical changes we must bring, take a risk, and be the one who makes a difference. Not risking (doing the same) is the greatest risk there is.

Use this invitation and contact me to join me in those activities for a better future based on better business for all.

I am waiting for your WhatsApp +972-542523425 / email nisraely@biofeed.co.il.

IF YOU LIKE THIS COLUMN, PLEASE SHARE IT WITH FRIENDS WHO SHOULD KNOW ABOUT IT.

TAKEAWAYS

- **DISRUPTIVE INNOVATION** is essential to our survival, now more than ever before.
- **UNDERDEVELOPED ECONOMIES'** best chance to escape poverty is by encouraging breakthrough innovation.
- **FOCUS ON** what you must have, regardless of others saying it is impossible.
- **THERE ARE** those people who know everything and those who dream. The dreamers change the world. Follow the dreamers or be one.

Follow me on LinkedIn.

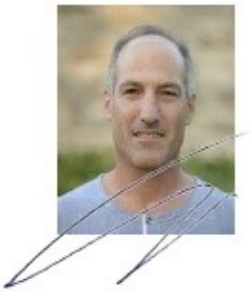
If you enjoyed the article, please share it with three friends and colleagues.

SUBSCRIBE TO THE WEEKEND COLUMN.

**** Mental and Economic Freedom Are Interconnected ****

See you soon,

Nimrod



Text me: +972-54-2523425 (WhatsApp), or email nisraely@biofeed.co.il

P.S.

If you missed it, here is a link to last week's blog, "*What Are You Cultivating?*"

Link to recent columns.

P.P.S.

Please look at the video series "The Agricultural Gap." I explain the historical roots of the agricultural gap between African and Western countries with short videos.

I see this video series as "uncompleted," as I am waiting to gain more confidence before completing the chapters with The Solution, as I perceive it.

If you like it, don't forget to ***share*** it with those who need to see it and ***Subscribe***.

Change Begins With A Decision

That The Existing Reality Is A Choice

And Not A Decree of Fate