



SMARF
make your farm smart

Why do global food processors strengthen FMG? (FMG = Farm Management Group)

PepsiCo to pump in \$5 m to promote sustainable farming in India

Meenakshi Verma Ambwani | TV Jayan | New Delhi | Updated on October 28, 2018 | Published on October 28, 2018



A file photo of farmers harvesting potato crop near Ajitgarh, Punjab, for PepsiCo

In 5 years, the MNC hopes to double its farmers' network from the current 24,000



Nestlé

600 thousands contract farms in 80 countries

Calbee

17/18 annual report mentioned strengthening FMG Enforcement

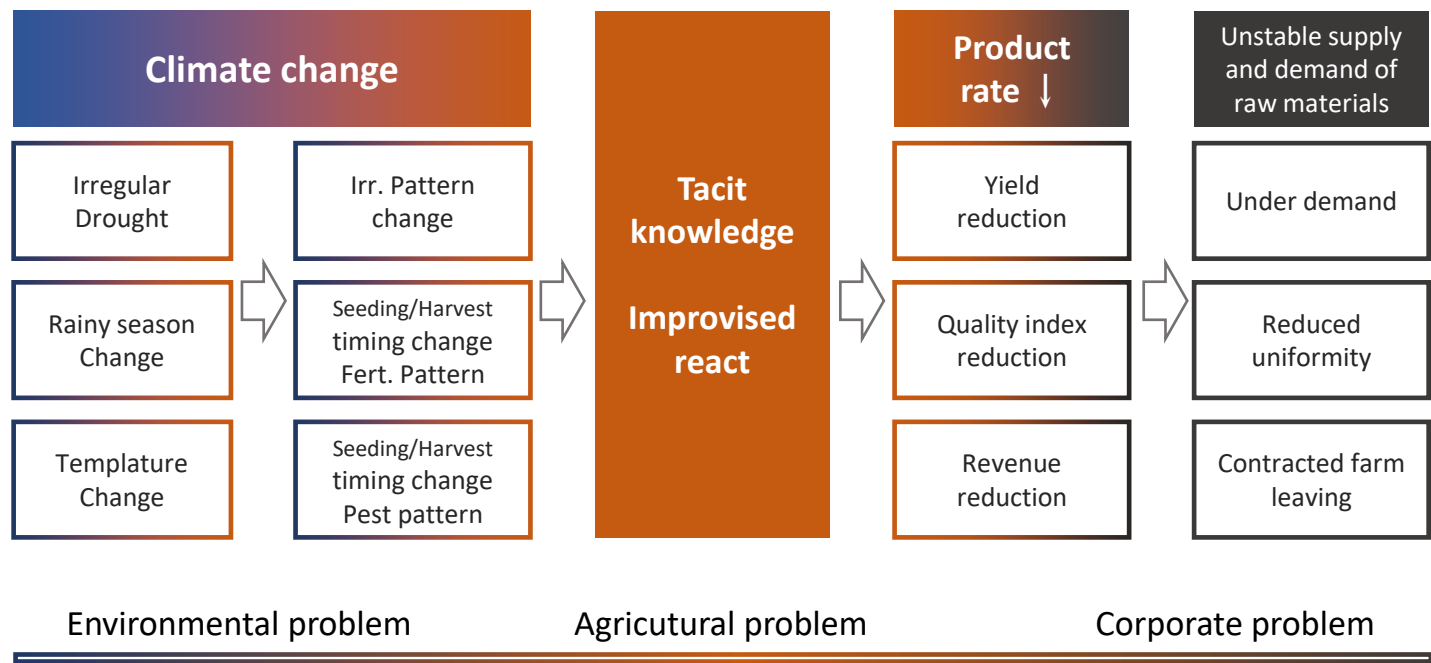


Almost all the raw materials will be sourced via direct sourcing by the year of 2020



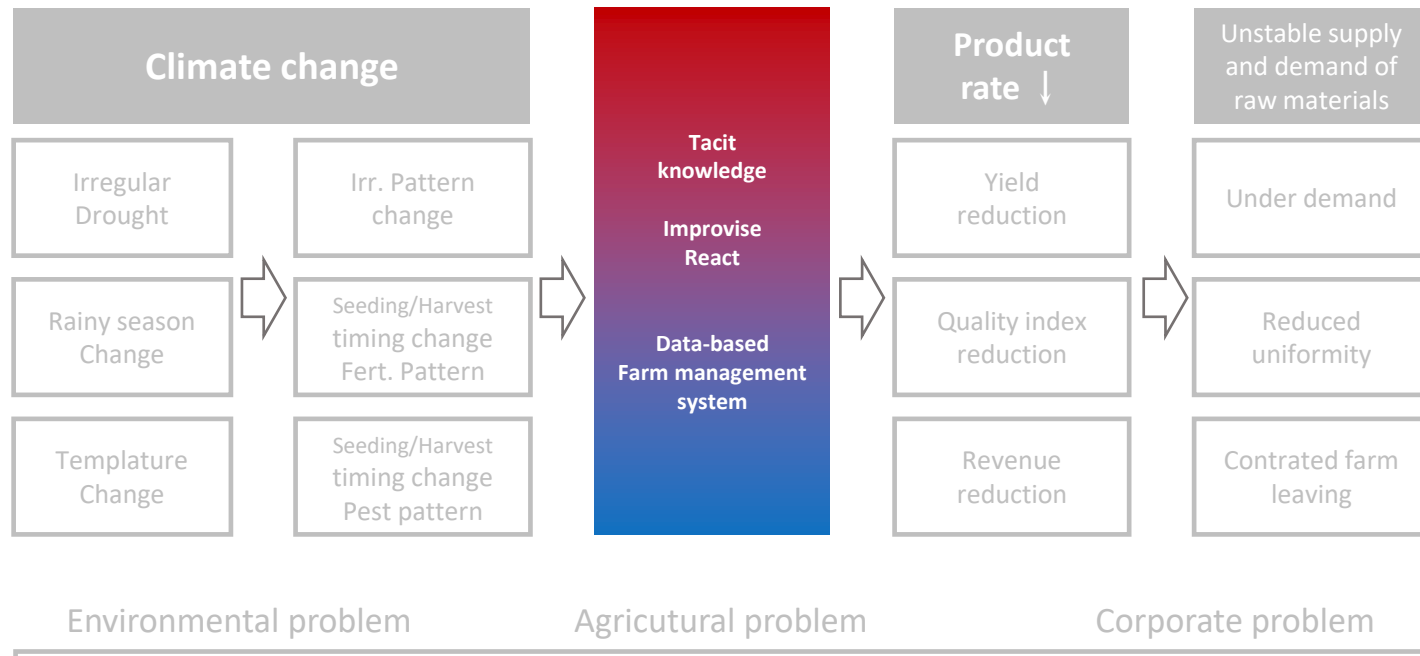
Many global food processors strengthen their Farm Management Group. It calls several different names like Sustainable farming and Social impacts in farming. Why do global food processors specially care about their contracted farmers lately?

Climate change ↗ Product rate ↓ # of Contracted farm ↘



Climate change cause farming problem and Farming problem lower productivity and many contracted farmers turn to uncontracted. Then processors face the situation that It is no longer possible to guarantee a stable supply of raw materials.

Solving the production problem is the clue

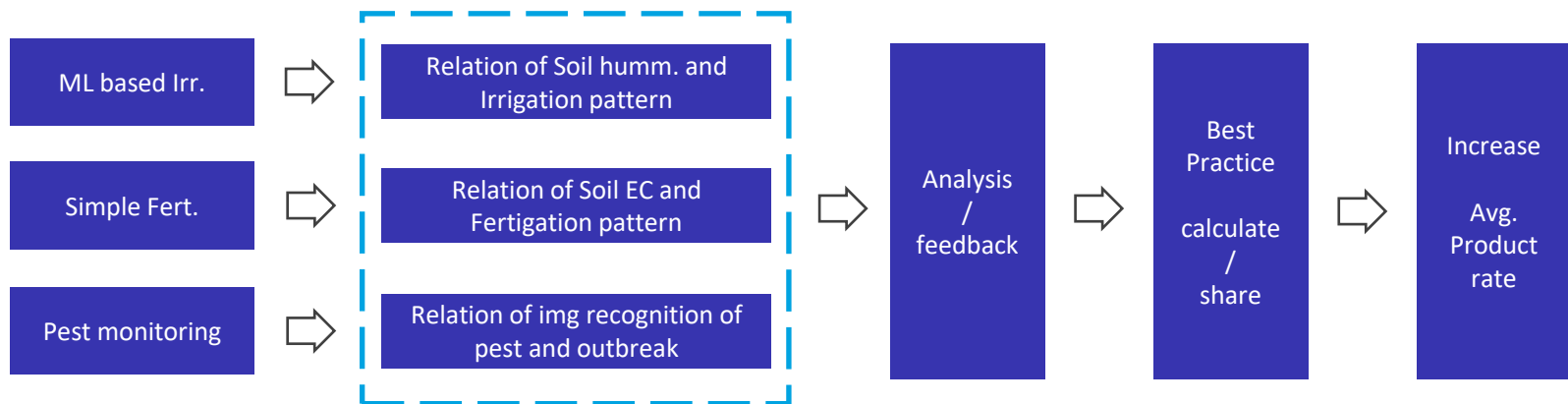


We can fix this situation with Data based farm management solution which can make decision and react by collecting, analysing data, and actuating devices.

A new paradigm is needed for FMG (Farm Management Group)



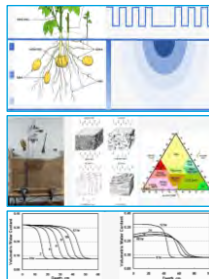
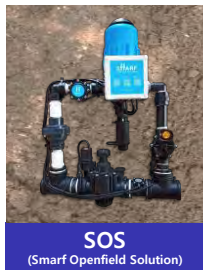
Face to Face management



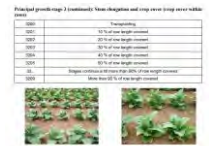
Untact data-driven management by cloud service

Legacy method of FMG is face to face management and it cannot overcome the problems, because the indicators for purpose are not clear and it is getting harder and harder in the untact situation like now. So we need untact data-driven management way.

Hardware / Analysis / Platform / SW service



Soil pattern analysis



BBCH scale analysis



Pest pattern analysis

HW platform
(Module based)

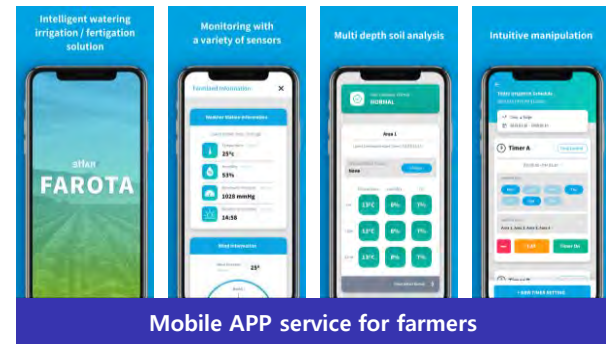
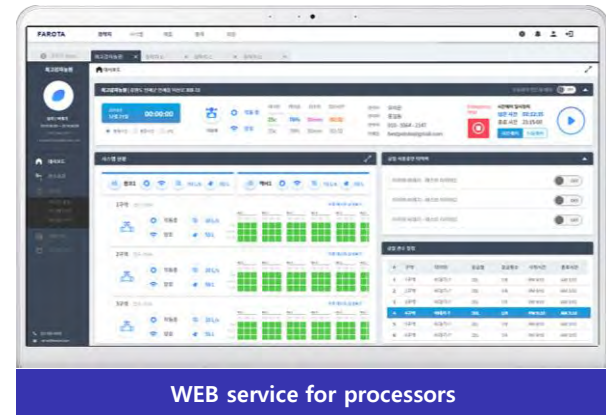
Network server

IoT gateway
(Protocol connector)

IoT platform
(App server, Rule engine, DB)

FAROTA
(WEB/APP service)

Custom service
(White-label WEB, Dashboard)



We've developed several full-stack system HW, backend, analysing tool and SW Service. But techs inside like backend system is never important to users.

If it fits the purpose of users, the simpler the more perfect.



SOS
(Smart Openfield Solution)



Valve

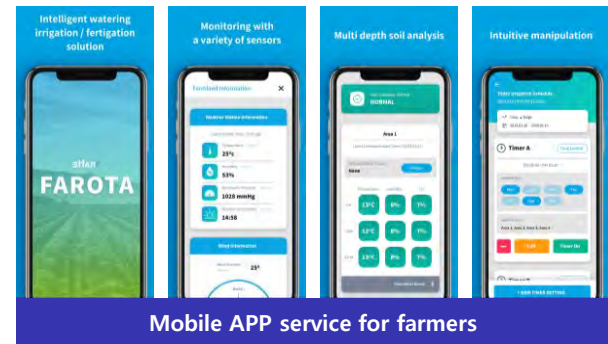
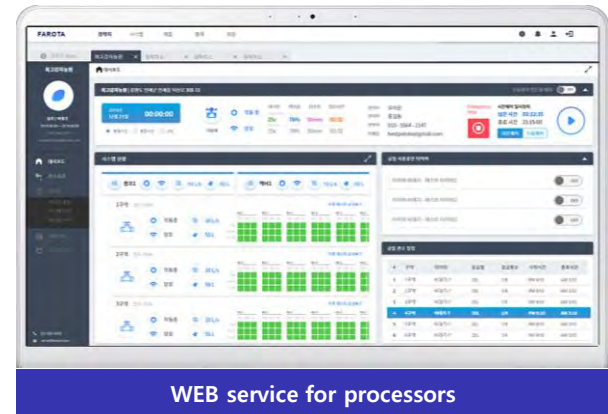


Soil sensor



Easy to
buy, install
and use

Simply
guided
and follow



If it fits the purpose of user, it's the perfect solution for user. SMARF's HWs are cheap because we cut off all the things but essential. It's easy enough to install. A farmer can finish it alone in 15mins. Cut the pipe, attach system and scan qr code. That's it. And we are trying to make WEB and APP as intuitive as we can. Underlying magics are LPWA network, ultra low power management, ML based pattern analysis, and so on but techy things are not that important in here.

The solution that raised the product rate of global food processors in POC tests 4 times over 2 years



**Avg. 29% product rate increase in potato(for chips) fields.
[Orion(Korea),Orion(China),PEPSICO th(Thai)]**



It turns out that the solution works in tobacco field as well.

And it works. With Global food processors like Orion, PEPSICO and Tobacco authority of Thiland, We did 4 POC tests in Korea, China and Thailand. The solution raised product rate as well as quality index, of All 4 tests of 2 crops over 2years.

Both processors and contracted farmers are satisfied



He was an office worker.
2 years after starting farming,
He recorded the best product rate
among all the Orion's contracted
Farms with SMARF.
(23.1 ton/ha, 2018)



Mr. Kim is a newbie farmer in potato chip industry.
He'd been one of the best farmer in Orion group in just 1yr
working with SMARF.



Hi, today we harvest potato



Tomorrow there will be Ajimoto
Thailand guy coming to see the
system

I want to introduce SMARF to
them

Mr. Chanin is a Pepsico's contracted farmer.
And he can harvest potatoes in offseason with SMARF.
It is the first record in his region, Sankampeng.



Panot Votpunya

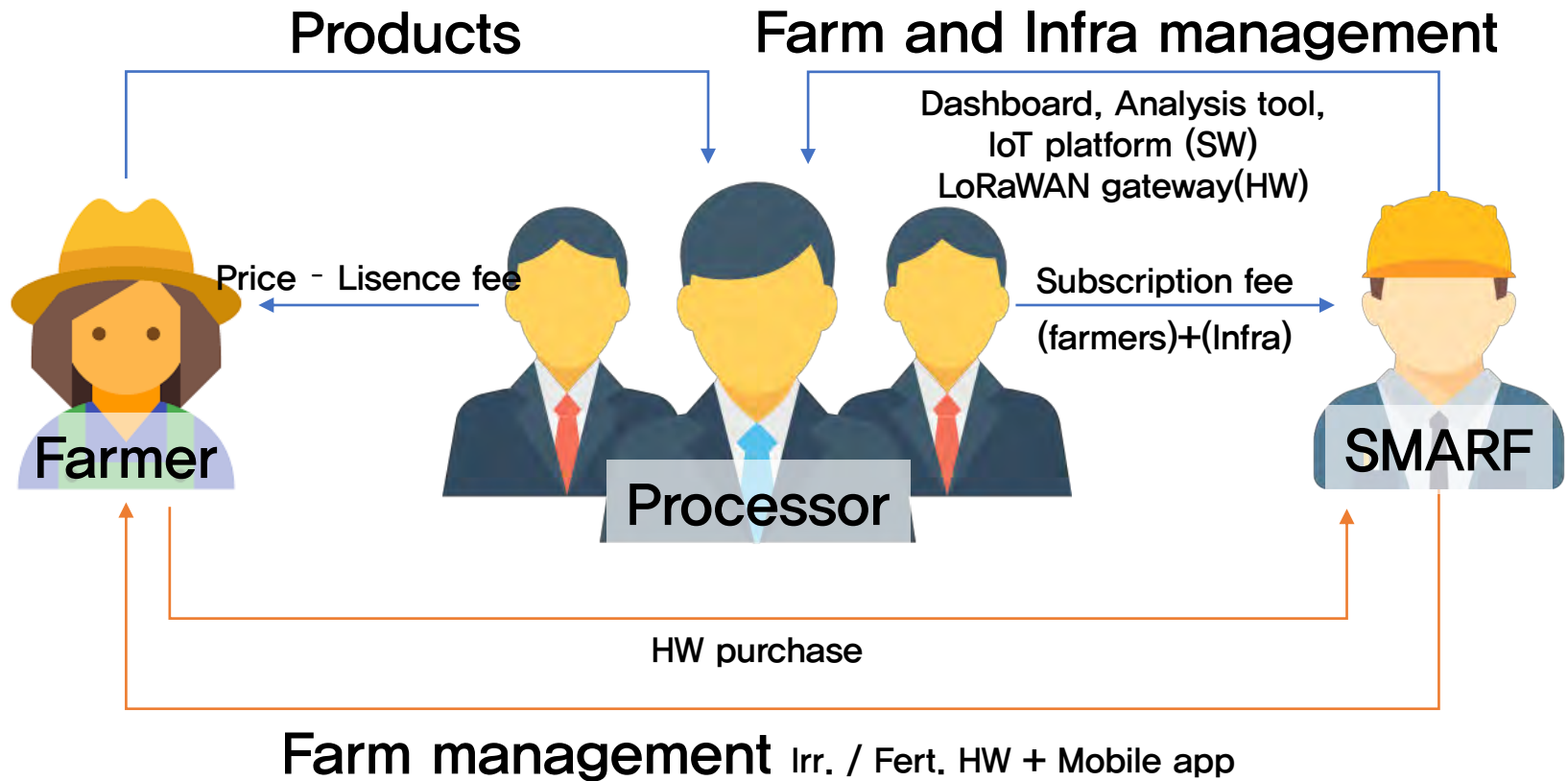
@Haan Chael am so
appreciate You are one of
my best partner since I
have been worked in
tobacco industry. See you
soon



Mr. Panot is the head of TOAT research center in Chiangrai.
We are talking about using the solution for contracted farmers
of TOAT

Of course, not only the processing companies but also the farmers were satisfied with the results. It's natural because they earned extra money. Even if farmers pay for the service license to be paid in the future, the additional income is sweet enough.

Farm management subscription model as a service



We've done the systems and seen how it worked. Now we want to test how the business work. Our business model is Farm Management Platform as a Service. Processors and farmers use our HW and SW as a service like AWS IoT core service. We set our first market to ASEAN countries and we are thinking of flip our Korean headquarter to Singapore and leave Korean branch to R&D lab.

MAKE
YOUR
FARM
SMART



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