

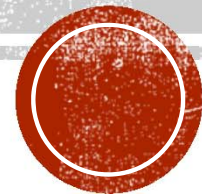
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TECHNOLOGY INNOVATIONS IN AGRICULTURAL RISK MANAGEMENT

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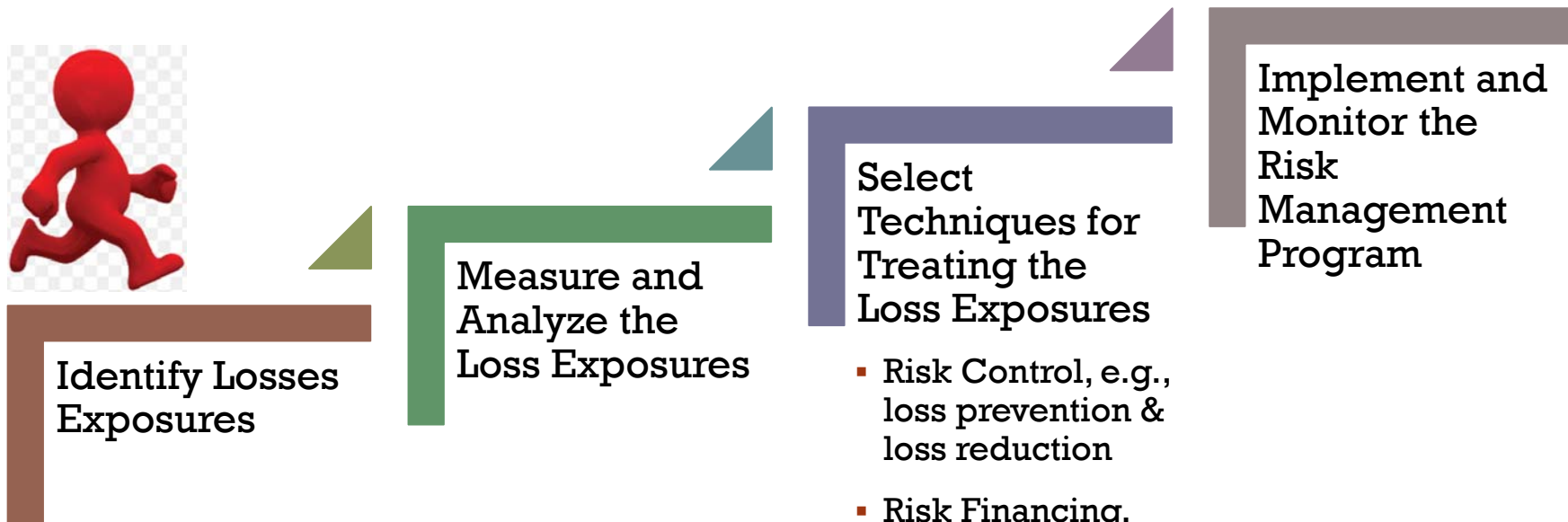




Source: <https://tw.images.search.yahoo.com/>

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STEPS IN AGRICULTURAL RISK MANAGEMENT PROCESS



TECHNOLOGY ADAPTED IN AGRICULTURAL INSURANCE CONTRACT

<i>Client interface</i>		<i>Transaction processing</i>	<i>Data analysis</i>
<i>Enrolment and premium payment</i>	<i>Loss verification</i>		
<ul style="list-style-type: none"> – Mobile phone with a global positioning system (GPS) – Short message service (SMS) – Smart card – Point-of-sale (PoS) terminal – Subscriber identity module (SIM) – Mobile payments platform – Wireless access service provider (WASP) – General packet radio services (GPRS) 	<ul style="list-style-type: none"> – Radio frequency identification device (RFID) – Biometrics – Weather indices – Spatial mapping technology – Remote diagnosis 	<ul style="list-style-type: none"> – Software as a service (SaaS) – Call centre – Management information system (MIS) – Voice over Internet protocol (VOIP) – Data standardization 	<ul style="list-style-type: none"> – Database analysis – Weather stations data – Satellite imaging data

Source: Adapted from Gerelle and Berende, 2008.

TECHNOLOGIES & TOOLS



Source: Shynkarenko, 3rd Asia Agricultural Insurance Conference, 2016

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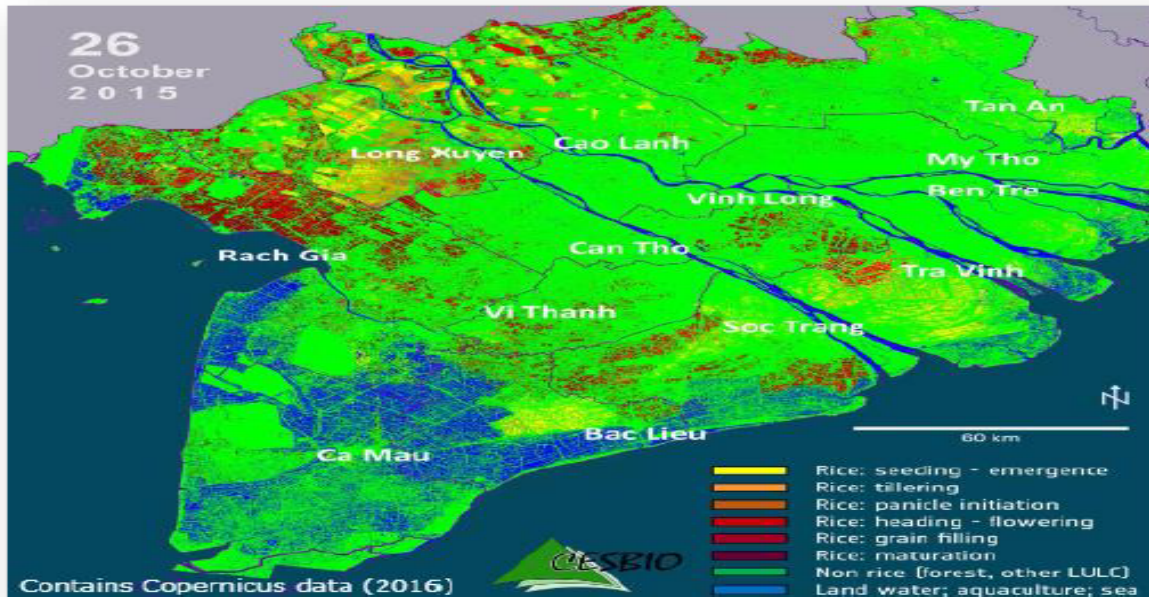
ADVANTAGES OF ADAPTING SMART TECHNOLOGIES

- Launch weather advisory system → better management decision → enhance loss control process.

SATELLITES



Example: Monitoring of Crop Stages for *Winter-Spring Rice 2015/16*



**Mekong Delta,
Vietnam**
300 km x 300 km,
20 m resolution

- Source: Shynkarenko, 3rd Asia Agricultural Insurance Conference, 2016

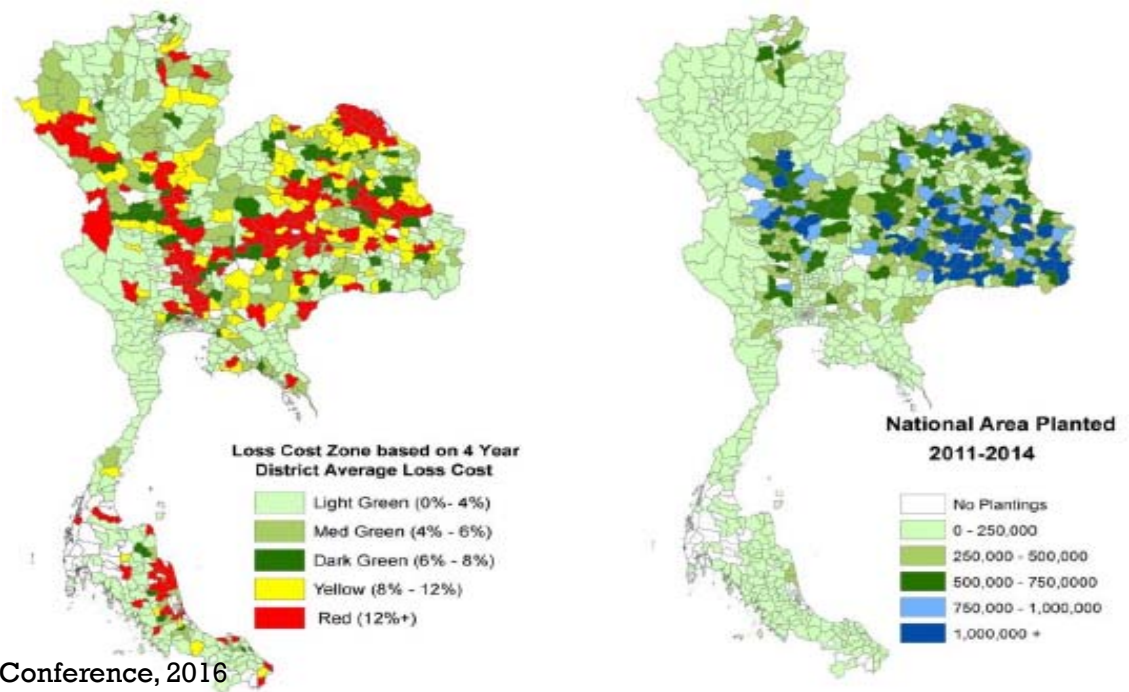
ADVANTAGES OF ADAPTING SMART TECHNOLOGIES

- Launch weather advisory system → better management decision → enhance loss control process.
- Settle crop loss claims under insurance program and maintain a satellite data through remote sensing technology for dispute discrepancy resolution.

POLITICAL INFLUENCE

Thailand Disaster Declarations

- Loss assessment monitoring
- Government wants payouts for political gain



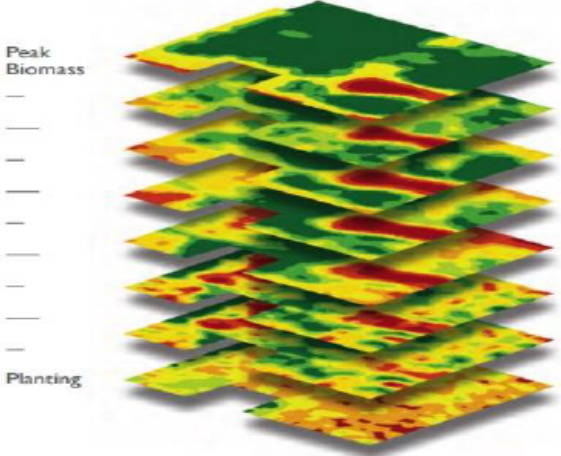
Source: Sapra, 3rd Asia Agricultural Insurance Conference, 2016

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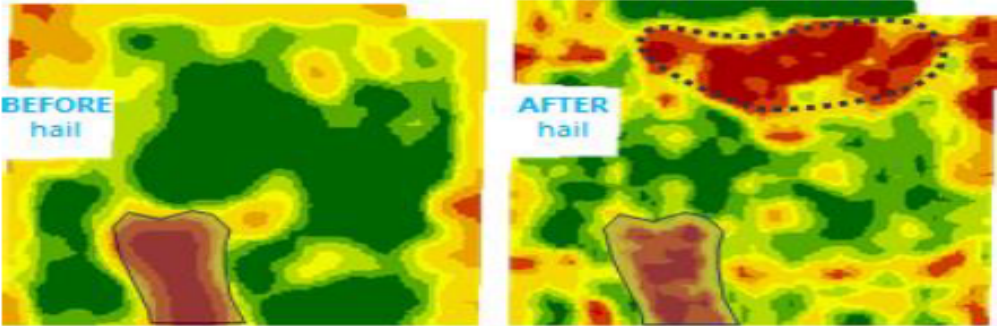
SATELLITES



Field's history with in-season imagery



Compare field imagery before and after risk event



Source: Shynkarenko, 3rd Asia Agricultural Insurance Conference, 2016

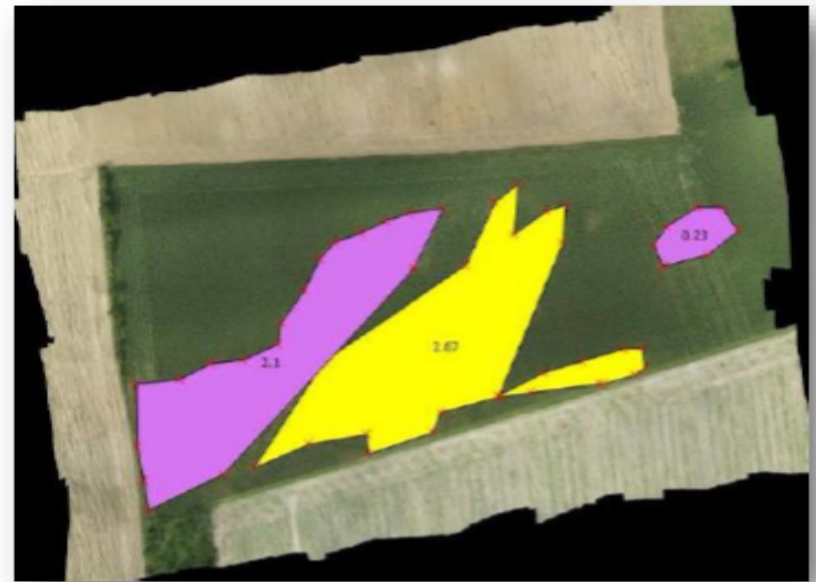
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DRONES (UAV)



Imagery taken by drone

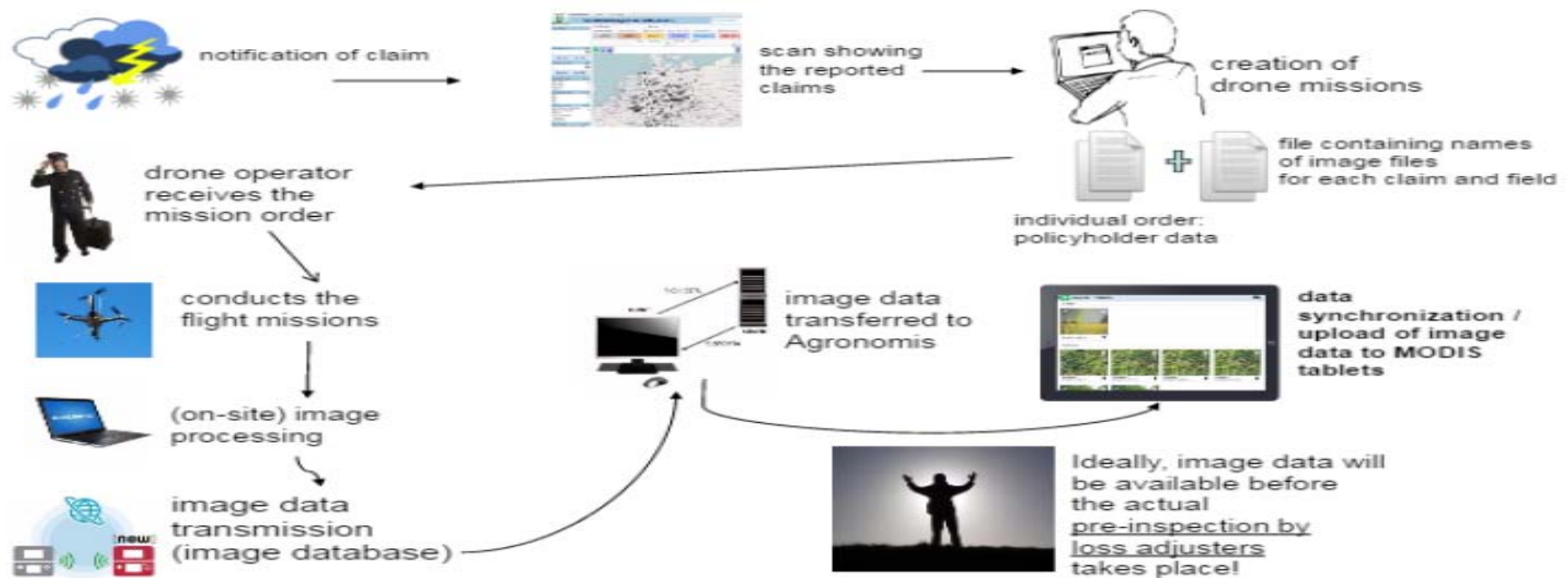
Damage assessment



Source: Shynkarenko, 3rd Asia Agricultural Insurance Conference, 2016

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LOSS ADJUSTMENT PROCEDURE WITH USE OF DRONE



Source: Shynkarenko, 3rd Asia Agricultural Insurance Conference, 2016

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ADVANTAGES OF ADAPTING SMART TECHNOLOGIES

- Launch weather advisory system → better management decision → enhance loss control process.
- Settle crop loss claims under insurance program and maintain a satellite data through remote sensing technology for dispute discrepancy resolution.
- Speed up the indemnity payment process and improve the actuarial premium calculation.
- Better design in insurance contract.
 - parametric insurance, e.g., drought insurance, Normalized Differenced Vegetation Index (NDVI) insurance

APPLICATION OF SMART TECHNOLOGY IN TAIWAN – DISASTER MONITORING SYSTEM

以尼伯特颱風為範例

解除陸警海警
0708/1430L 颱風自台南將擊出海
0706/1430L 發布海警
0706/2030 發布陸警
氣象局官方路徑登陸期間高層之颱風中

- 陸上颱風警報發布
- 中央災害應變中心一級開設
- 人員機具部署
- 收容安置準備
- 防災弱點補強
- 預防性撤離
- 高風險區旅客撤離
- 土石流紅色警戒
- 土石流保全戶撤離
- 淹水警界發布
- 淹水災情
- 災區搶救與安置
- 危險道路封路
- 危險橋樑封橋
- 搶險

農業災害資料定位與展示

農作物圖資套疊

以防災操作為目的提

整 備 供 情 資 應 變

- 本階段的情資應以災害預測為主
- 預報災害發生區位與規模
- 提出作適切的應變建議為重點

- 本階段的情資應以災害監測為主
- 評估災害衝擊程度與研判災害是否持續擴大
- 提出作適切的救災搶險之調度為重點

現有作物分佈訊息呈現

Source: TARI, NCDR & CWB (2017)

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CONCLUSION

- With the advances in technology, data sources can be improved and operation challenges can be addressed. Ultimately, agricultural insurance program benefits from the innovations.



Agricultural Insurance



**THANK YOU FOR YOUR
LISTENING**