

# Efektivitas Manajemen Rantai Pasok Cerdas untuk Mengatasi Krisis Pangan Global

**Prof. Dr. Bustanul Arifin**

*barifin@uwalumni.com*

Guru Besar Ilmu Ekonomi Pertanian UNILA  
Dewan Komisiner dan Ekonom Senior INDEF  
Ketua Umum Pengurus Pusat PERHEPI

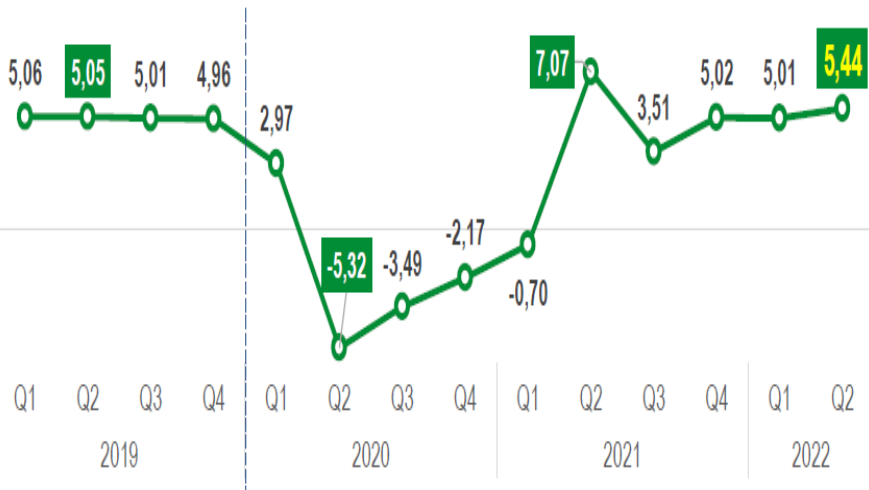
# Sistematika: Outline Presentasi

1. Pemulihan ekonomi berada pada jalur yang benar?
2. Ancaman Krisis: Indonesia harus mandiri pangan
3. Langkah dasar: Analisis determinan efisiensi rantai nilai
4. Beberapa kasus rantai nilai pangan strategis
5. Penutup: Strategi dan Perubahan Kebijakan ke Depan

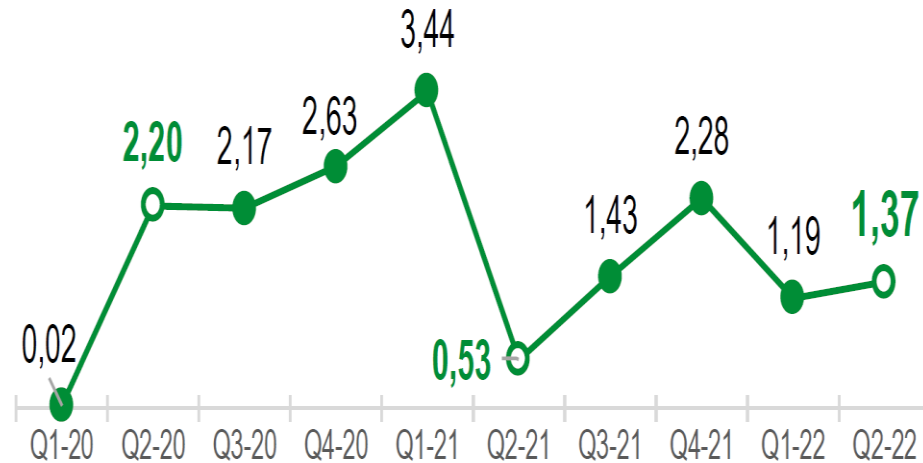
# Pemulihan ekonomi **Indonesia** berada pada **jalur benar**?

- Pertumbuhan ekonomi Indonesia pada Q2-2022 mencapai rekor tinggi **5,44%** (y-on-y), menjadi harapan bagi proses pemulihan yang berkualitas dalam menghadapi krisis pangan;
- Sektor pertanian tumbuh 1,37% (y-on-y), banyak didorong oleh subsektor perikanan 2,73%, peningkatan produksi perikanan tangkap dan budidaya, dan oleh tanaman pangan 1,12%, karena musim panen padi dan optimalisasi lahan. Kemandirian pangan dapat diandalkan?

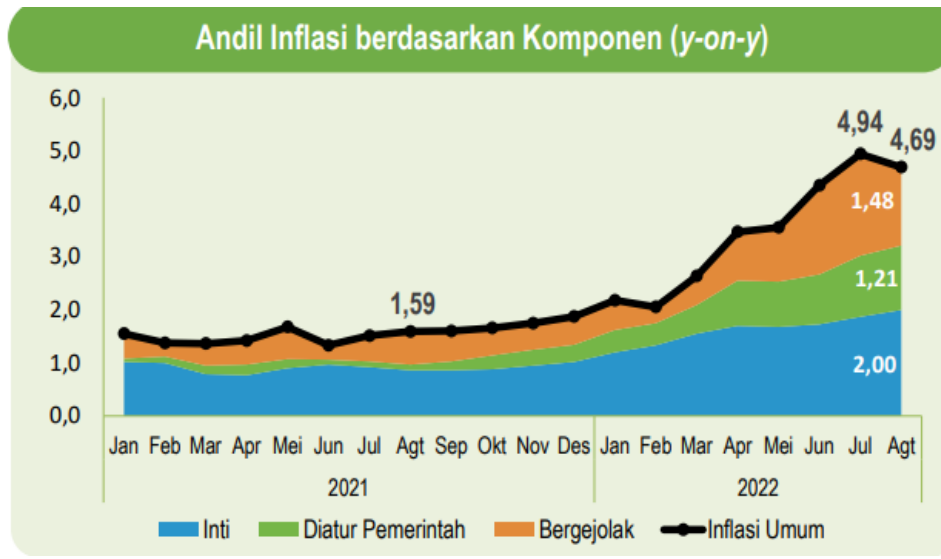
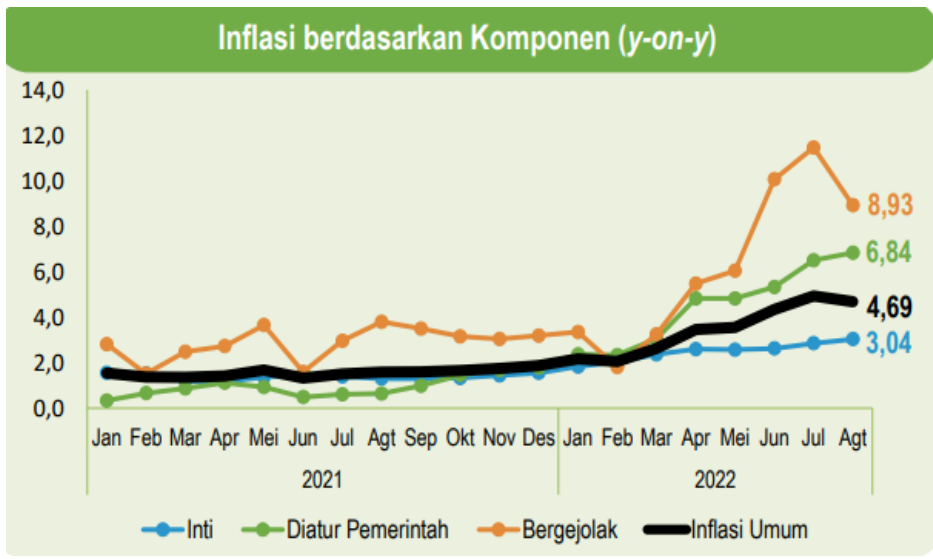
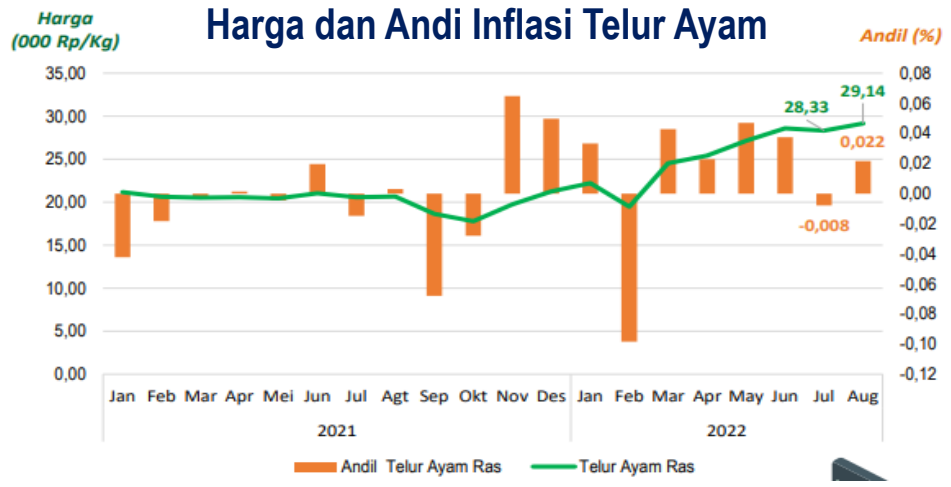
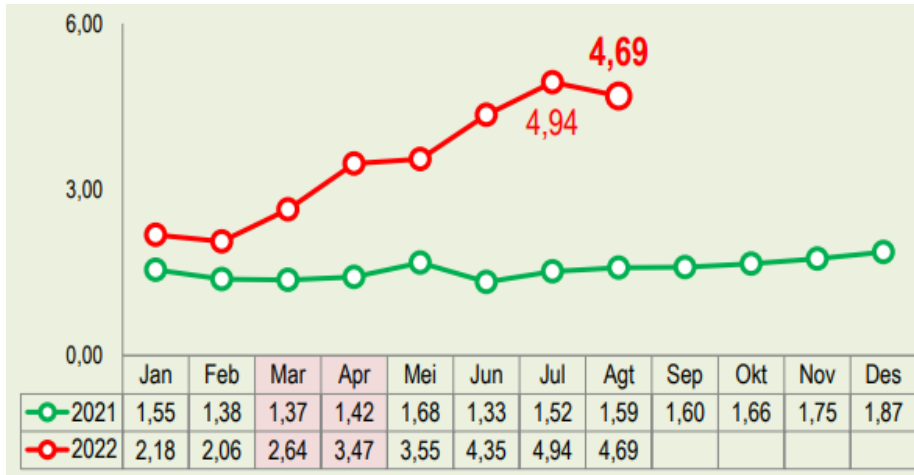
Pertumbuhan Ekonomi **Indonesia** 2019-2022 (% , y-on-y)



Pertumbuhan Sektor Pertanian 2020-2022 (% , y-on-y)



# Laju Inflasi Indonesia, 2021-2022 (1 September 2022): Data BPS



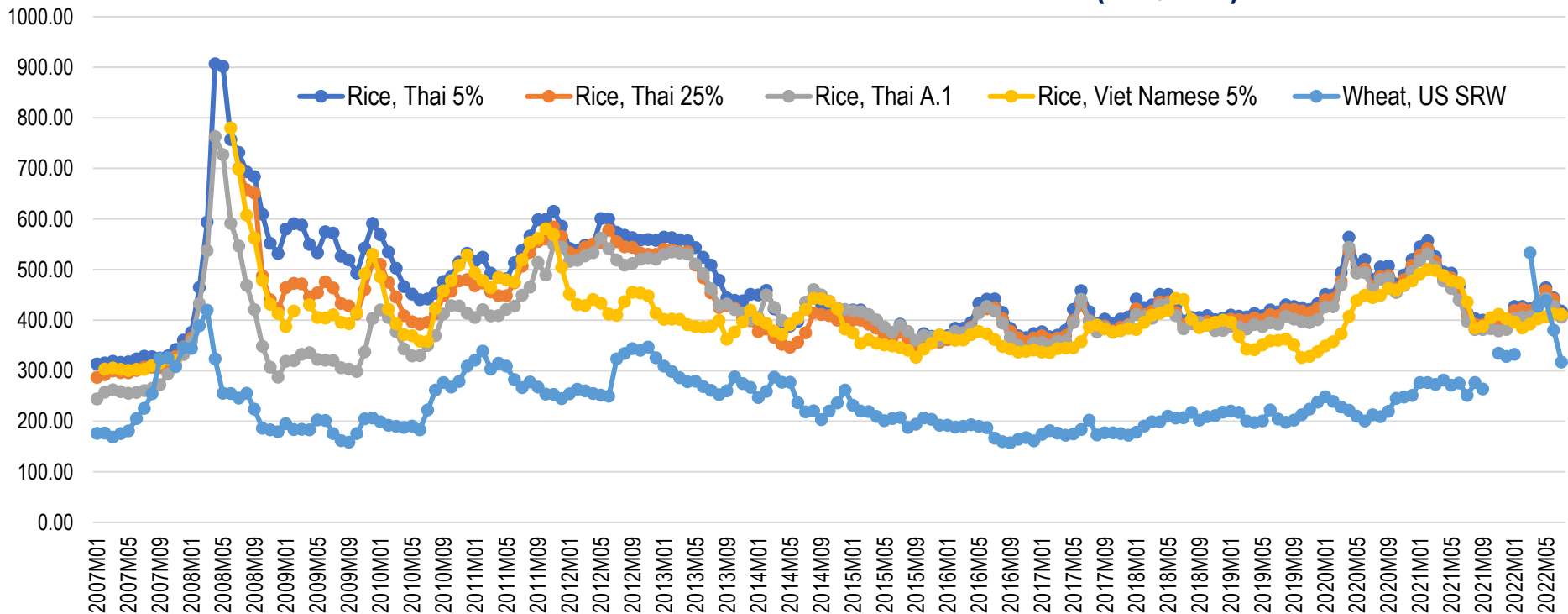
# Ancaman Krisis: Indonesia Harus Mandiri Pangan

- Fenomena **stagflasi**, pertumbuhan ekonomi rendah dan laju inflasi tinggi
- Ekonomi global turun dari 5,7% pada 2021 ke 2,9% pada 2022, dan 3% pada 2023-2024. Ekonomi AS tumbuh 2,5%, Eropa 2,5%, dan Jepang 1,7%.
- Ekonomi China tumbuh 4,7%, Indonesia 5,4%, Thailand 2,9%, Turki 2,3% Argentina 4,3% dan *emerging markets* lainnya
- Laju inflasi AS 8,7%, Spanyol 8,7%, Jerman 7,9%, Italia 6,9%, Turki 73,5%. Laju inflasi Indonesia 4,9%, Swiss 2,9%, Perancis 5,2%, Korsel 5,4%, dll.
- Indonesia harus mandiri pangan. Kecenderungan proteksionisme baru. Banyak negara melarang ekspor pangan, sehingga harus dipecahkan secara diplomasi ekonomi.
- Pengalaman Indonesia melarang ekspor CPO menurunkan harga TBS petani.
- Antisipasi krisis pangan dan kondisi lebih buruk harus terus dilakukan

# Data Bank Dunia: Kenaikan harga biji-bijian--Beras & Gandum

- Dampak invasi Rusia amat signifikan pada **harga gandum**, walau harga gandum kembali mulai stabil
- Harga beras relatif stabil. Walau produsen beras Thailand, Vietnam, dll lebih mementingkan domestik
- **Indonesia**: Luas panen padi 2021 turun 245 ribu hektar. **2022**: Tantangan serius sistem produksi padi.

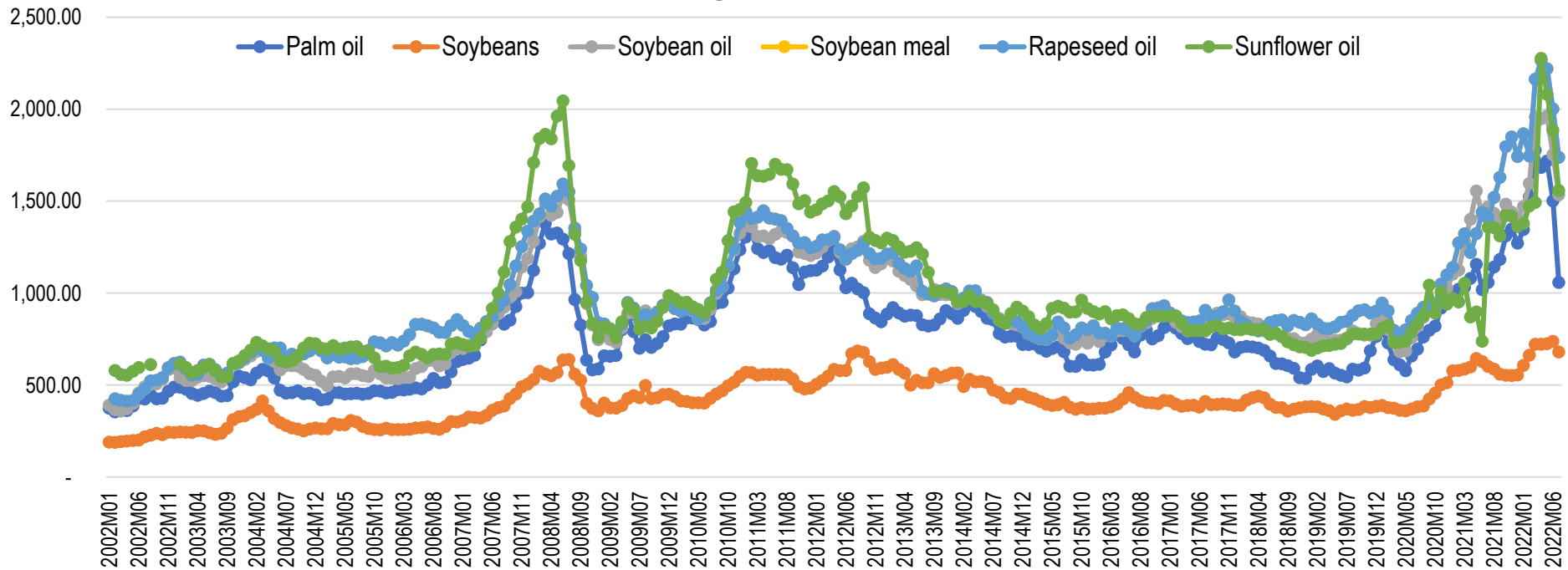
**Data: World Price of Rice and Wheat 2007-2022 (US\$/ton)**



# Kenaikan harga minyak nabati global: Indikator krisis?

- Kenaikan harga-harga minyak nabati berbanding lurus dengan krisis pangan dan krisis ekonomi global;
- Harga CPO anjlok sejak Indonesia melarang ekspor pada April-Mei 2022. Kini CPO mulai beranjak pulih
- CPO menjadi perhatian serius Uni Eropa, bahkan bertindak diskriminatif terhadap biodiesel dari sawit;

**Data: World Price of Vegetable Oils, 2002-2022 (US\$/ton)**



# Krisis Pangan Global: Klasifikasi Fase Ketahanan Pangan

## Integrated Food Security Phase Classification (IPC) & *Cadre Harmonisé* (CH)

Phase 1: Minimal	Phase 2: Stressed	Phase 3: Crisis	Phase 4: Emergency	Phase 5: Famine
Usually adequate and stable food access	Borderline adequate food access	Highly stressed and critical lack of food access with high and above usual malnutrition and accelerated depletion of livelihood assets	Severe lack of food access with excess mortality, very high and increasing malnutrition, and irreversible livelihood asset stripping	Extreme social upheaval with complete lack of food access and/or other basic needs where mass starvation, death, and displacement are evident

### IPC Phase Classification

<b>1 (A &amp; B)</b>	<b>Generally food secure</b>
<b>2</b>	<b>Moderately / Borderline Food Insecure</b>
<b>3</b>	<b>Acute Food and Livelihood Crisis</b>
<b>4</b>	<b>Humanitarian Emergency</b>
<b>5</b>	<b>Famine / Humanitarian Catastrophe</b>

- Individual / Household
- Community / Villages
- Area / District
- Region / Province
- National
- Regional / Kawasan
- Global



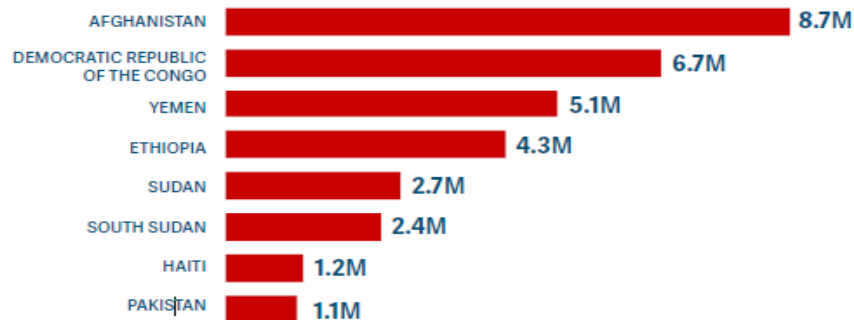
# IPC/CH acute food insecurity phase description and response objectives

Phase	Phase description and priority response objectives
<b>Phase 1</b> None/Minimal	Households are able to meet essential food and non-food needs without engaging in atypical and unsustainable strategies to access food and income. Action required to build resilience and for disaster risk reduction.
<b>Phase 2</b> Stressed	Households have minimally adequate food consumption but are unable to afford some essential non-food expenditures without engaging in stress-coping strategies. Action required for disaster risk reduction and to protect livelihoods.
<b>Phase 3</b> Crisis	Households either: <ul style="list-style-type: none"><li>• Have food consumption gaps that are reflected by high or above-usual acute malnutrition; or</li><li>• Are marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies.</li></ul> URGENT ACTION required to protect livelihoods and reduce food consumption gaps.
<b>Phase 4</b> Emergency	Households either: <ul style="list-style-type: none"><li>• Have large food consumption gaps which are reflected in very high acute malnutrition and excess mortality; or</li><li>• Are able to mitigate large food consumption gaps but only by employing emergency livelihood strategies and asset liquidation.</li></ul> URGENT ACTION required to save lives and livelihoods.
<b>Phase 5</b> Catastrophe/ Famine	Households have an extreme lack of food and/or other basic needs even after full employment of coping strategies. Starvation, death, destitution and extremely critical acute malnutrition levels are evident. (For Famine classification, area needs to have extreme critical levels of acute malnutrition and mortality). <sup>2</sup> URGENT ACTION required to revert/prevent widespread death and total collapse of livelihoods.

<sup>2</sup> A Famine classification requires evidence on food security, nutrition and mortality at or above IPC Phase 5 thresholds. If there is insufficient data for Famine classification but the available information indicates that Famine is likely occurring or will occur, then the famine classification is called 'Famine Likely'. It is important to note that Famine and Famine Likely are equally severe.

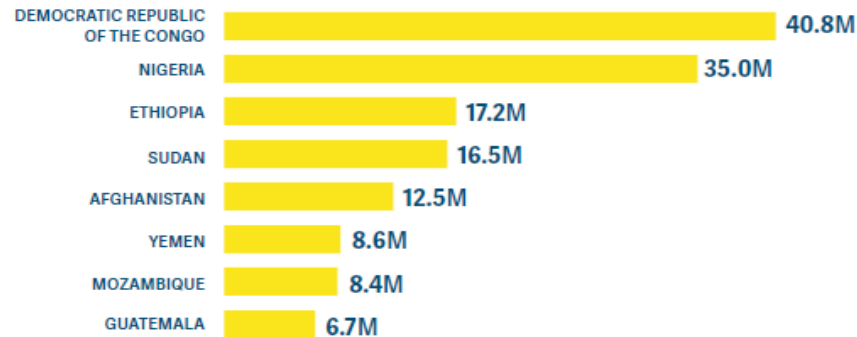
# Indikator Krisis Pangan Global di Beberapa Negara Terdampak

## Eight countries/territories had over one million people in Emergency (IPC/CH Phase 4) in 2021



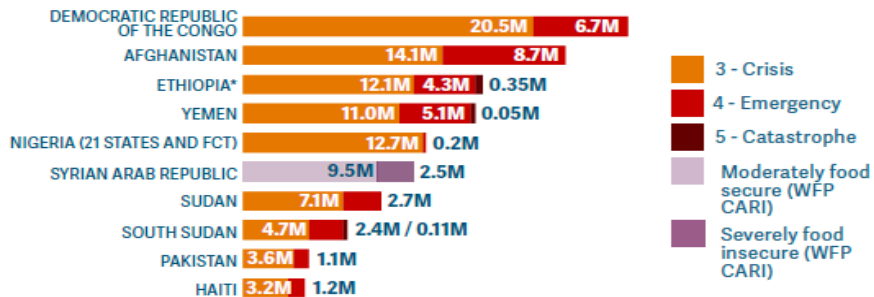
Source: FSIN using IPC data.

## Eight countries/territories with the largest populations in Stressed (IPC/CH Phase 2) in 2021



Source: FSIN using IPC and CH data.

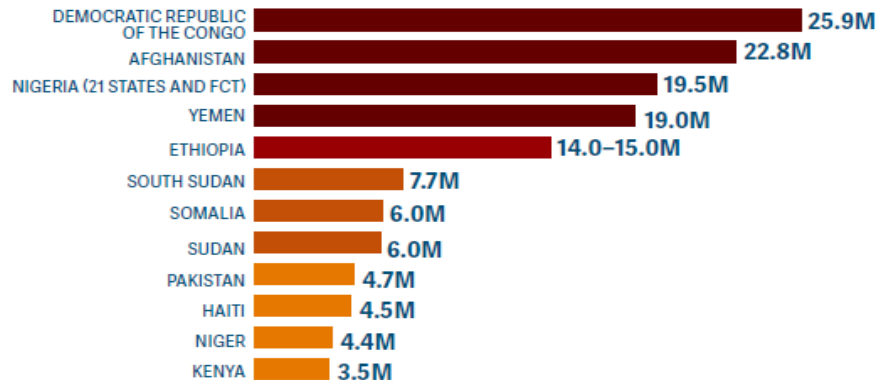
## Ten countries/territories with the highest number of people in Crisis or worse (IPC/CH Phase 3 or above) or equivalent in 2021



\* These consolidated estimates combine two IPC analyses – the October 2020 analysis of Belg and Meher-dependent areas (covering January–June 2021) and the May 2021 update of conflict-affected areas of Tigray, Afar and Amhara (covering May–June 2021). The Government of Ethiopia has not endorsed the May 2021 analysis.

Source: FSIN, using IPC, CH and WFP data; GRFC 2022.

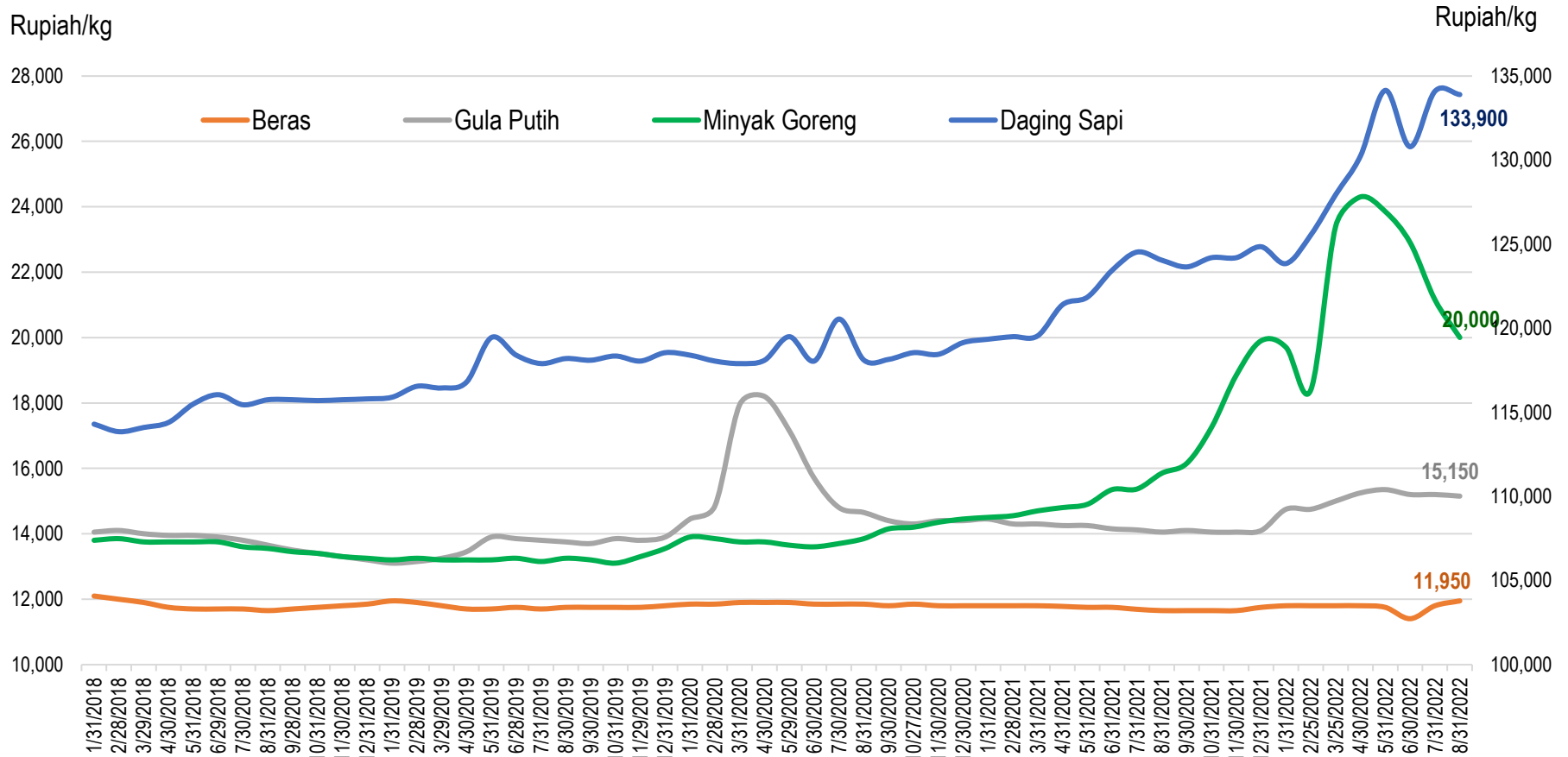
## Countries/territories with more than 3 million people forecast to be in Crisis or worse (IPC/CH Phase 3 or above) in 2022



Source: IPC/CH for all countries/territories except Ethiopia (FEWS NET).

# Harga beras dan pangan strategis cukup stabil

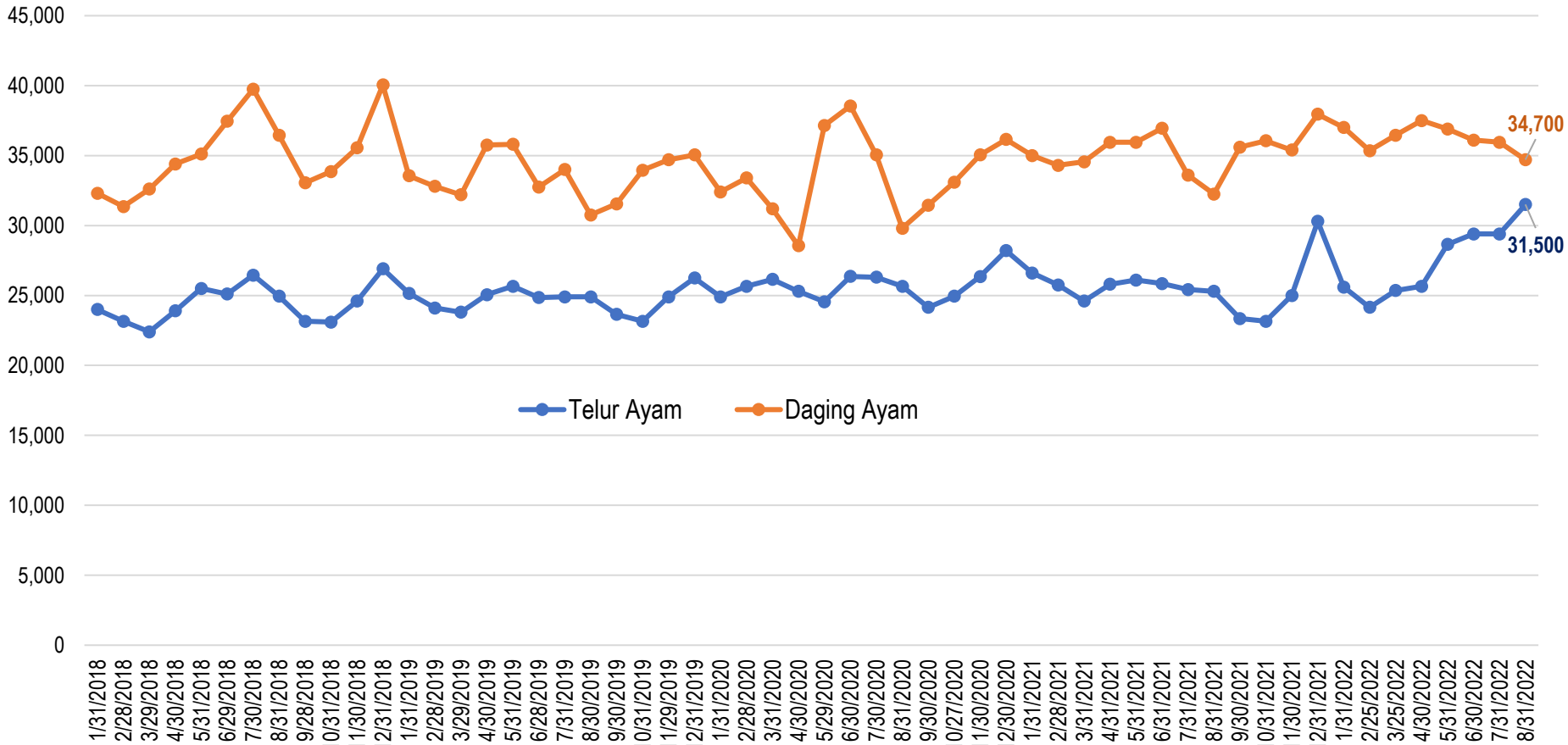
Harga Beras, Gula Pasir, Minyak Goreng (kiri) & Daging (kanan) (Rp/kg), 2018-2022



Sumber: PIHPS, 2 September 2022

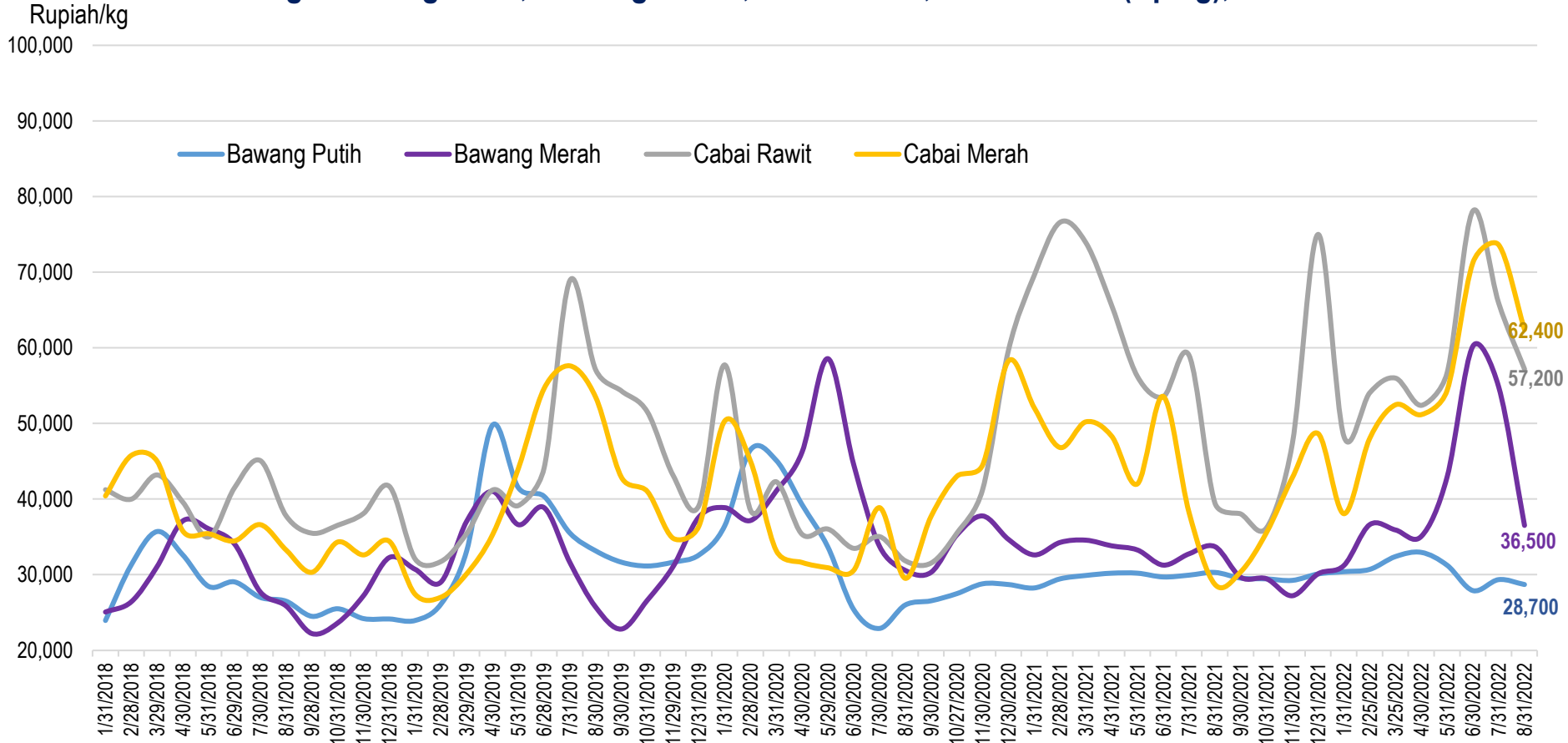
# Harga telur naik, walau harga daging ayam turun

## Harga Telur Ayam dan Daging Ayam (Rp/kg), 2018-2022



# Harga hortikultura domestik sangat fluktuatif

## Harga Bawang Putih, Bawang Merah, Cabai Rawit, Cabai Merah (Rp/kg), 2018-2022



# Determinan Efisiensi Sistem Rantai Nilai Pangan

1. Kinerja produksi, keseimbangan *supply & demand*
2. Struktur pasar dan struktur industri dari komoditas
3. Marjin dan biaya rantai nilai, keadilan balas jasa
4. Governansi dan kesederhanaan sistem rantai nilai
5. Faktor eksternal dan resiliensi sistem rantai nilai



# Smart Supply Chain Management (SSCM): IoT Required



**IoT** (Internet of Things)

Enabling continuous real-time supply chain visibility

## Networks

- GSM
- WiFi
- WIDE Area Low Energy



CONTINUOUS DATA FLOW

**Tracking**

Real-time Location

**Monitoring**

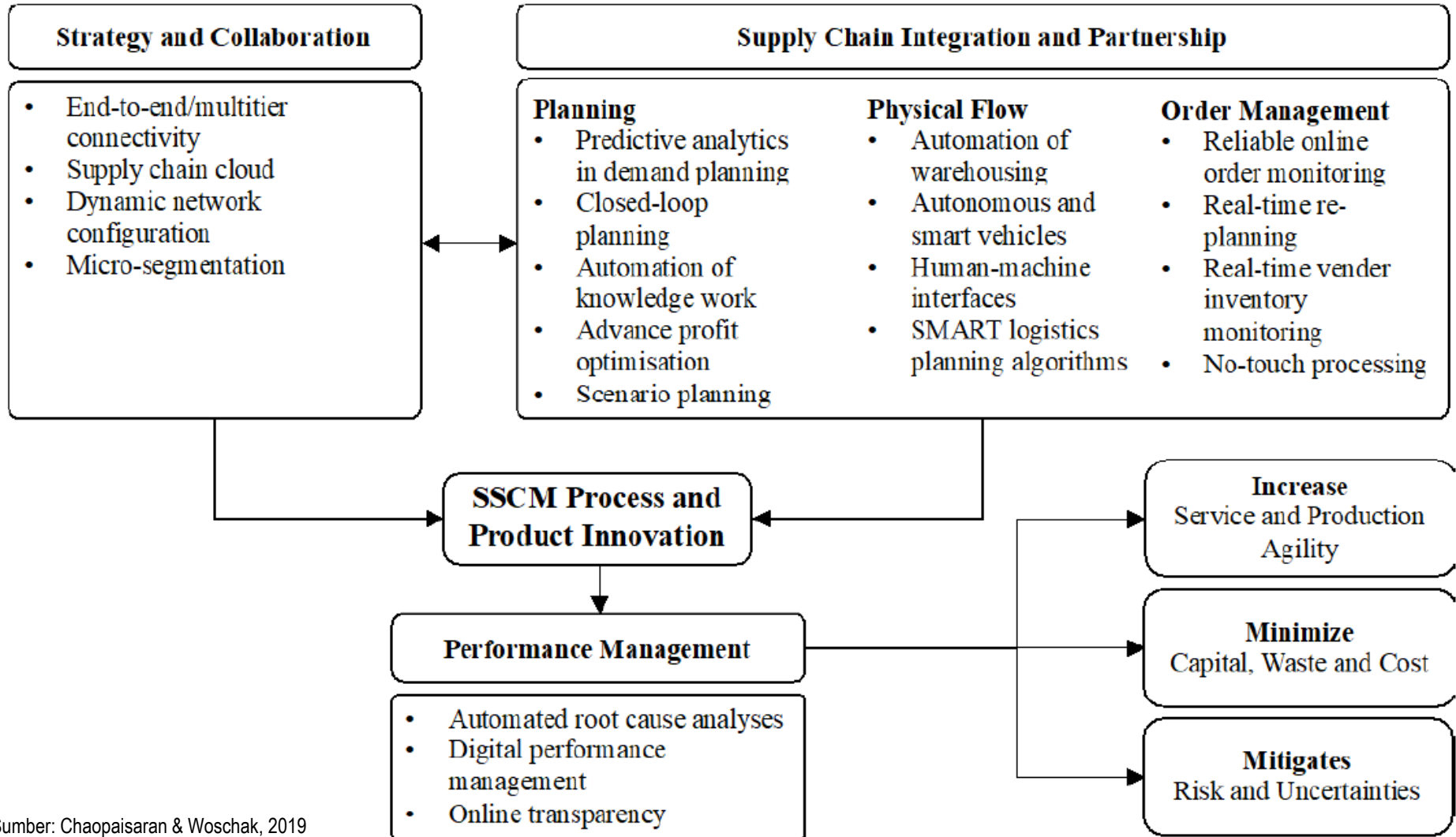
Real-time Condition Status

**Analytics**

Real-time exception Alerts

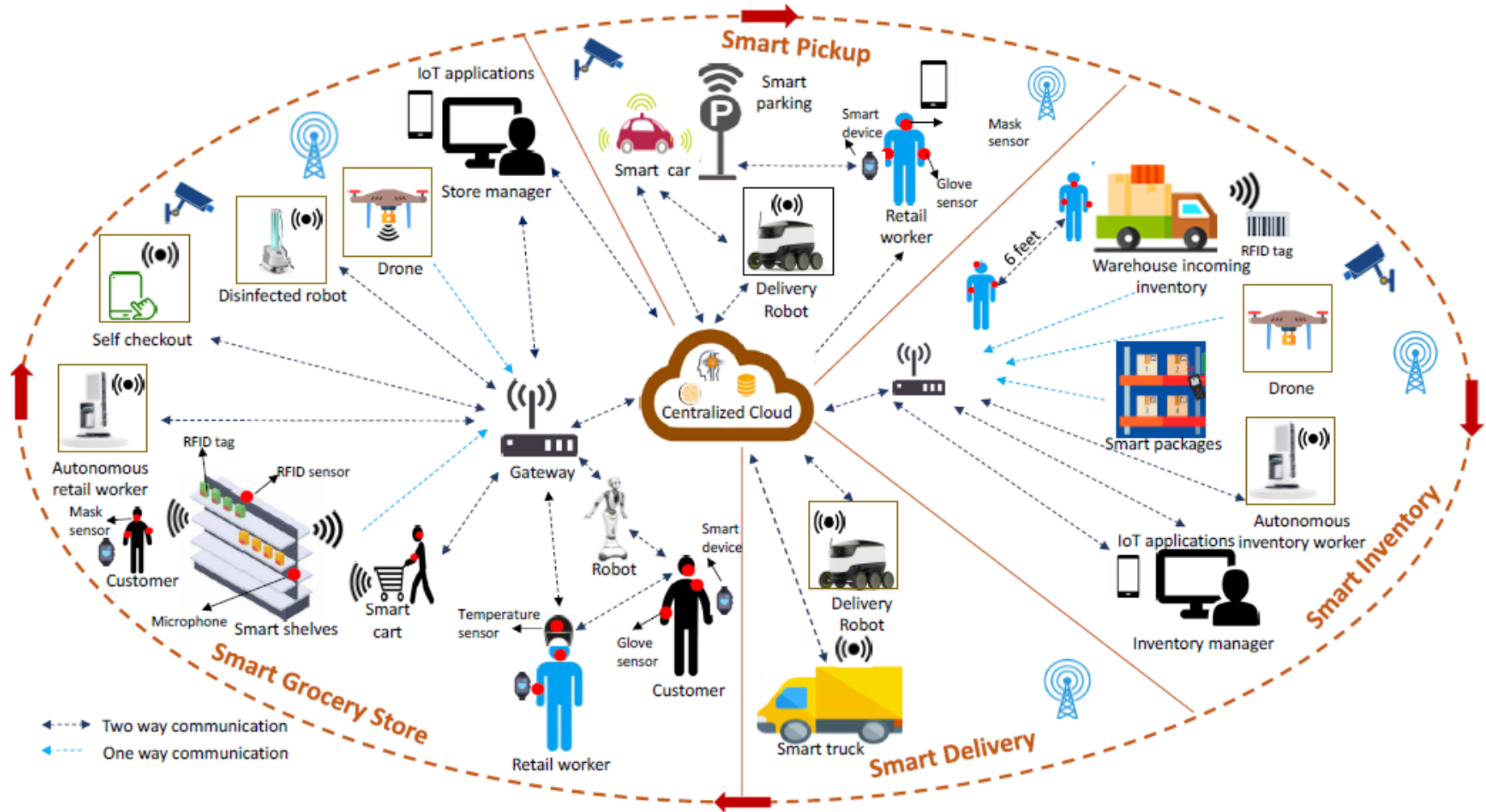


# Diagram Alur: Prasyarat Smart Supply Chain Management

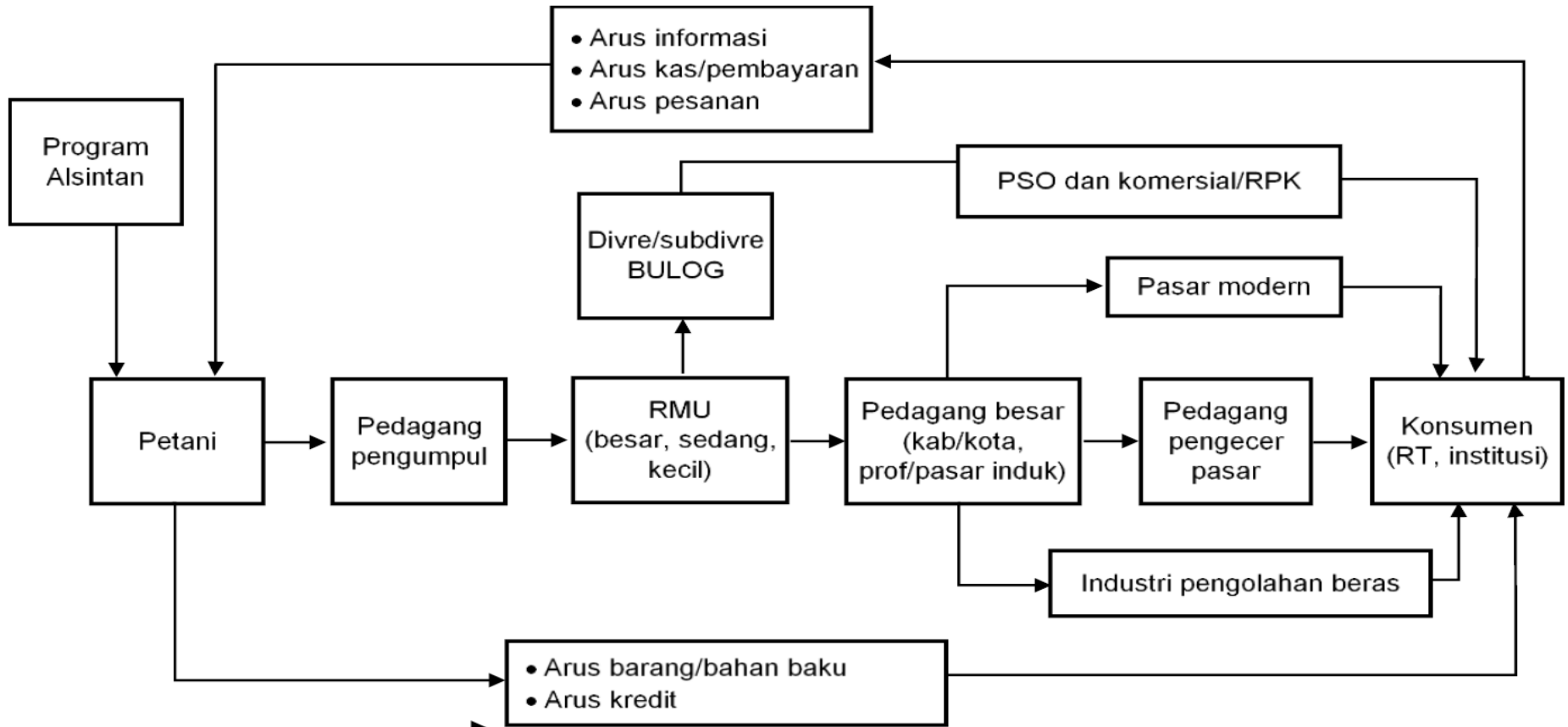




# Smart and Connected Supply Chain Management



# Rantai Nilai Beras dari Petani hingga Konsumen

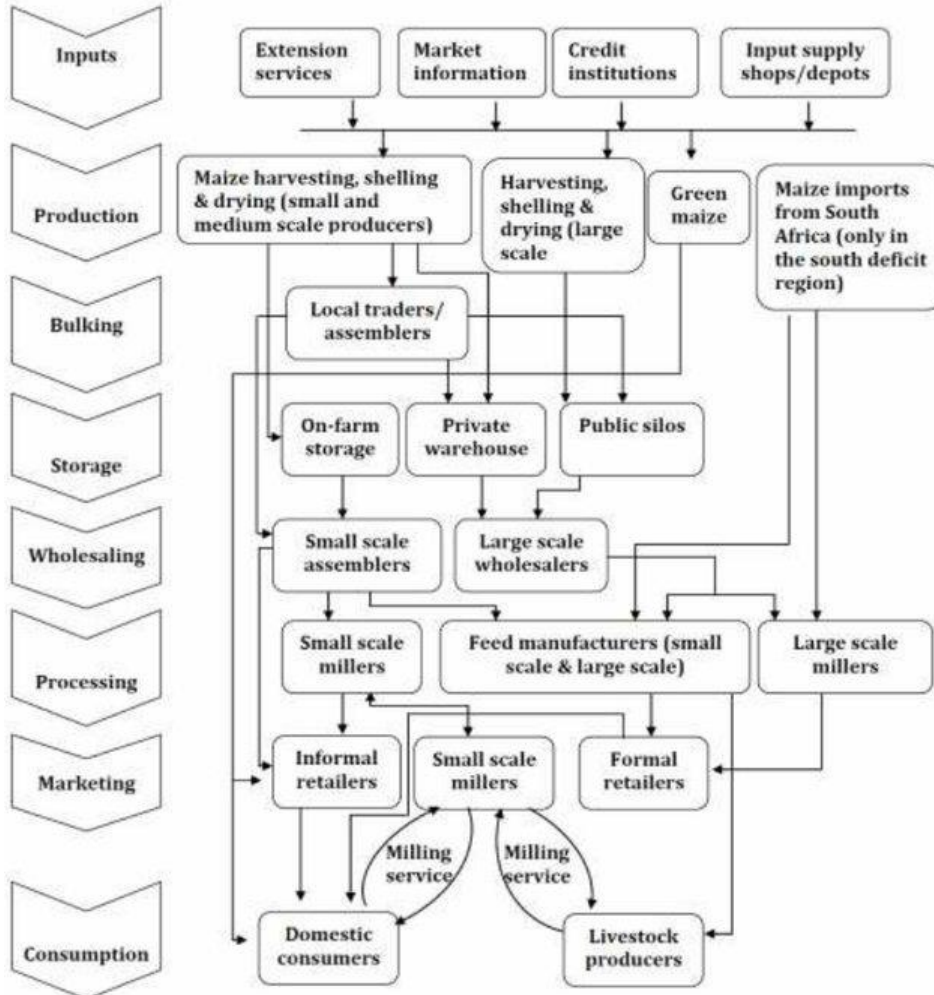


Keterangan:

adalah arus barang

Adalah arus informasi/pembayaran

# Peta Rantai Nilai Jagung dan Stakeholders terlibat

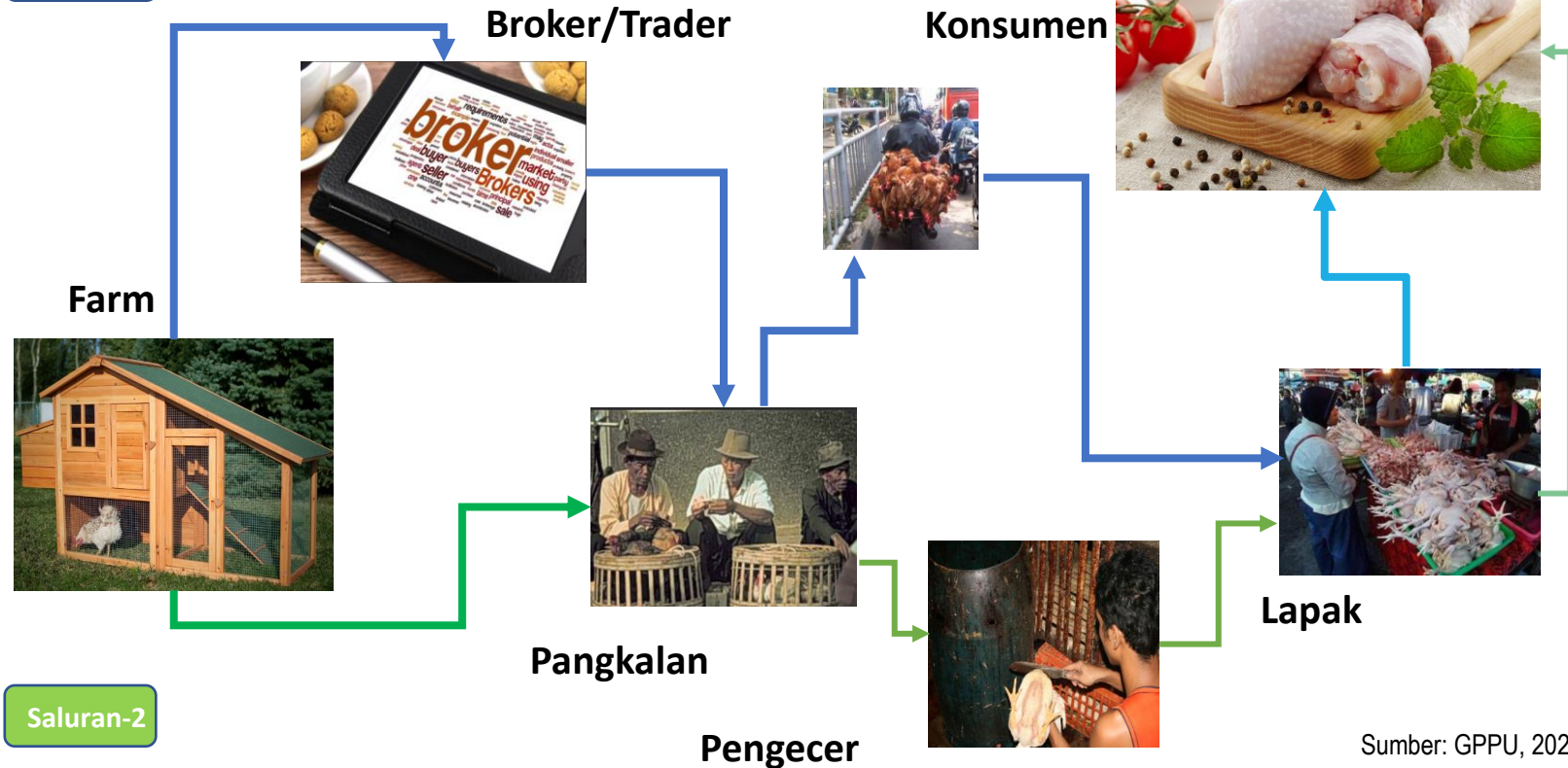


## Stakeholders pada rantai nilai jagung

- Petani
- Kelompok tani
- Pedagang pengumpul
- Pergudangan swasta
- Pergudangan pemerintah
- Pengolahan skala kecil
- Industri pengolahan skala besar
- Pabrik pakan
- Pengecer informal
- Pengecer formal
- Pelayanan pengolahan
- Konsumen rumah tangga
- Produsen peternakan
- Penyuluhan, informasi pasar,
- Kios saprotan, Lembaga pembiayaan, dll

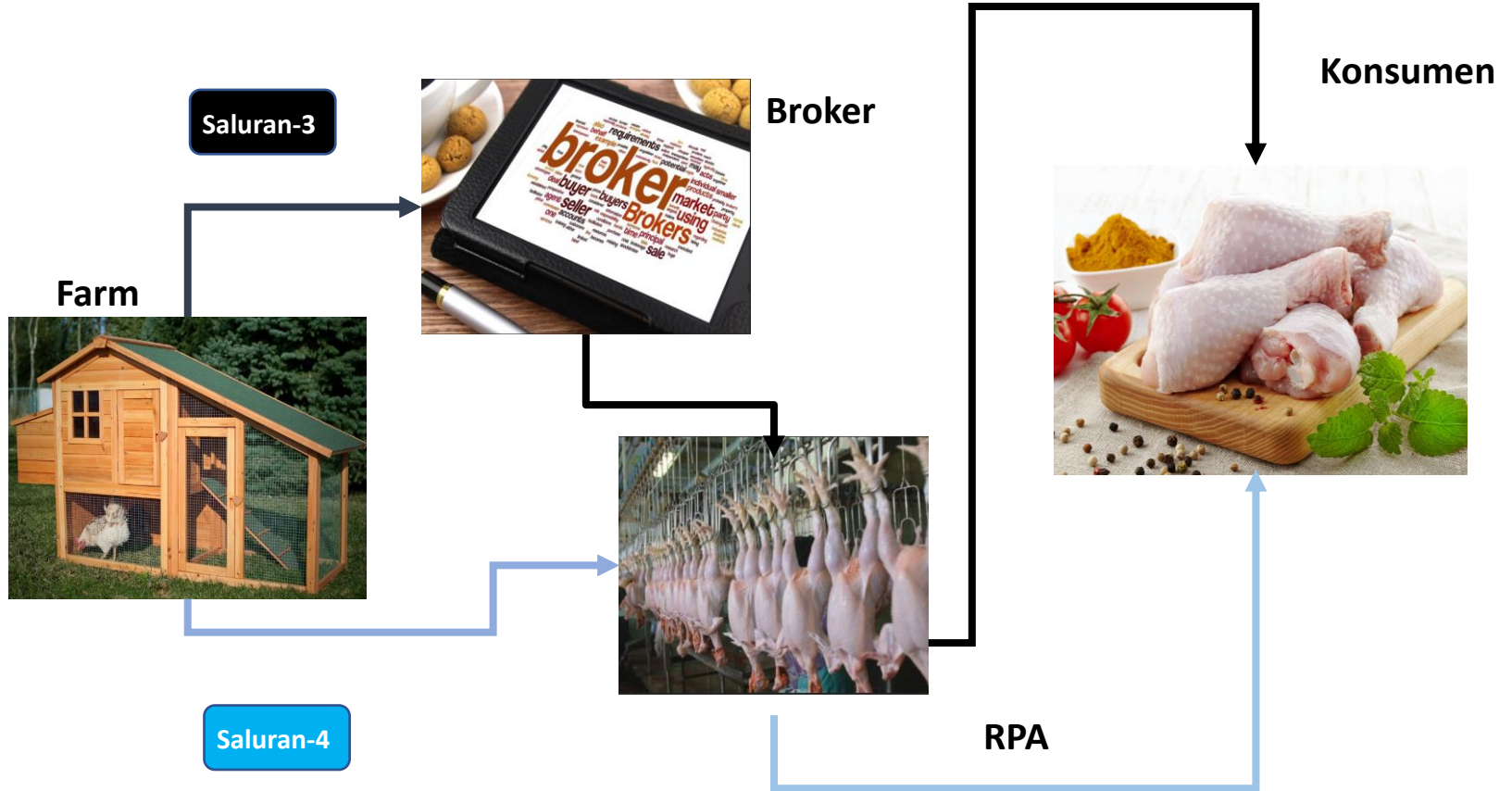
# Rantai Nilai Daging Unggas: Saluran 1 dan Saluran 2

Saluran-1

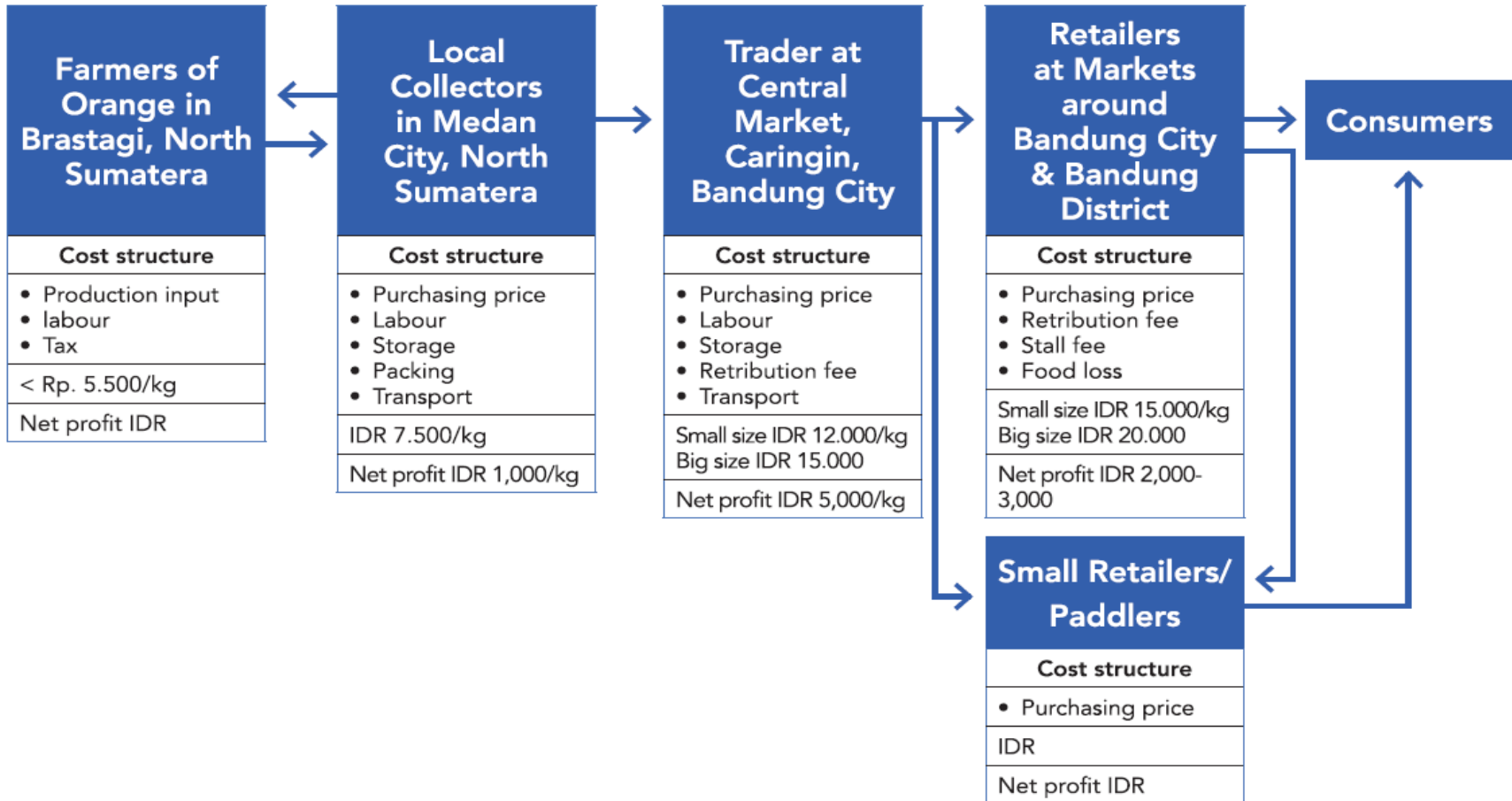


Sumber: GPPU, 2020

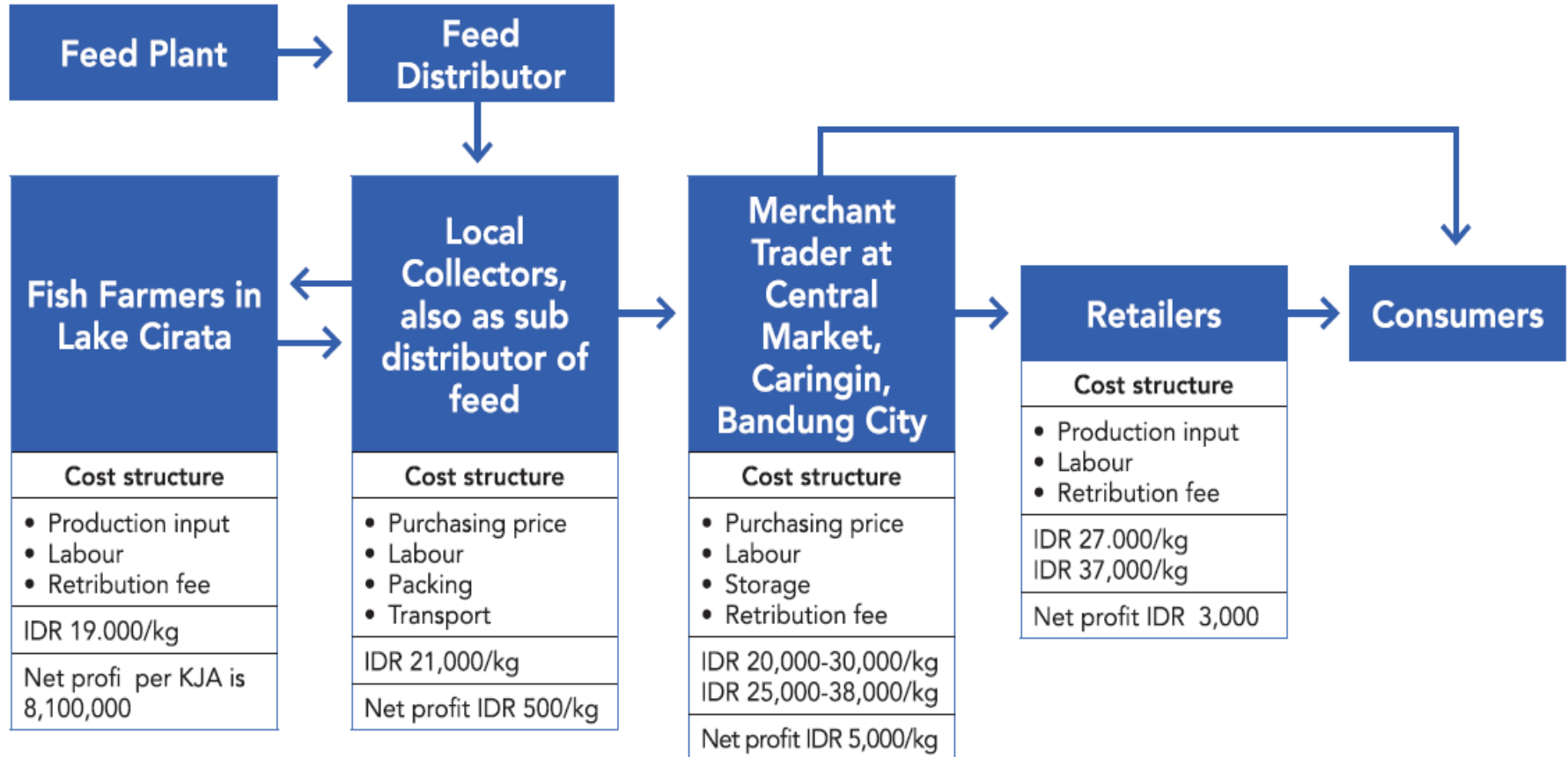
# Rantani Nilai Daging Unggas: Saluran 3 dan Saluran 4



# Rantai Nilai Jeruk Medan (Brastagi) ke Jakarta



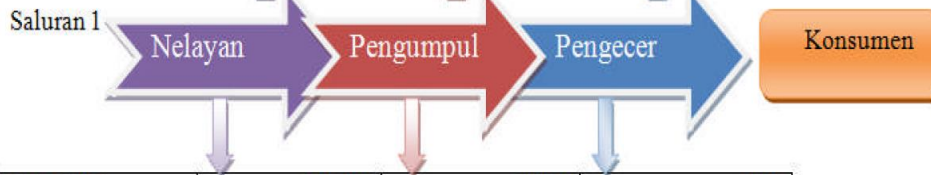
# Rantai Nilai Ikan Gurame ke Caringin, Jawa Barat



# Contoh: Rantai Nilai Perikanan di Sulawesi Utara

## Saluran 1: Nelayan-Pengumpul-Pengecer-Konsumen

- Bensin 84,2 % - Es 15,8 %	-Transportasi 30% - Biaya Es 70%	-Tas Plastik 13% -Biaya Es 33% -Konsumsi 27% -Sewa 27%
--------------------------------	-------------------------------------	---



Biaya/Kg	12.170	1.456	802
Harga/Kg	42.000	50.800	60.000
Nilai Tambah/Kg	29.830	8.344	8.398
Marjin			18.000

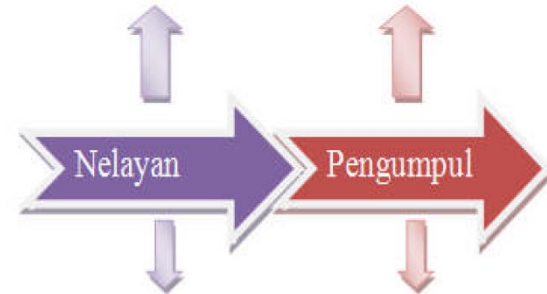
Chart Area

Nilai Tambah (Value Added) Rp. 46.572/Kg

## Saluran 2: Nelayan-Pengumpul-Konsumen

- Bensin 84,2% - Es 15,8%	-Transportasi 30% - Biaya Es 70%
------------------------------	-------------------------------------

Saluran 2



Biaya/Kg	12.170	1.456
Harga/Kg	42.000	52.000
Nilai Tambah/Kg	29.830	9.544
Marjin		10.000

Nilai Tambah (Value Added) Rp. 39.374/Kg



# Ikhtisar Hasil Analisis Resiliensi dan Risiko Krisis Pangan

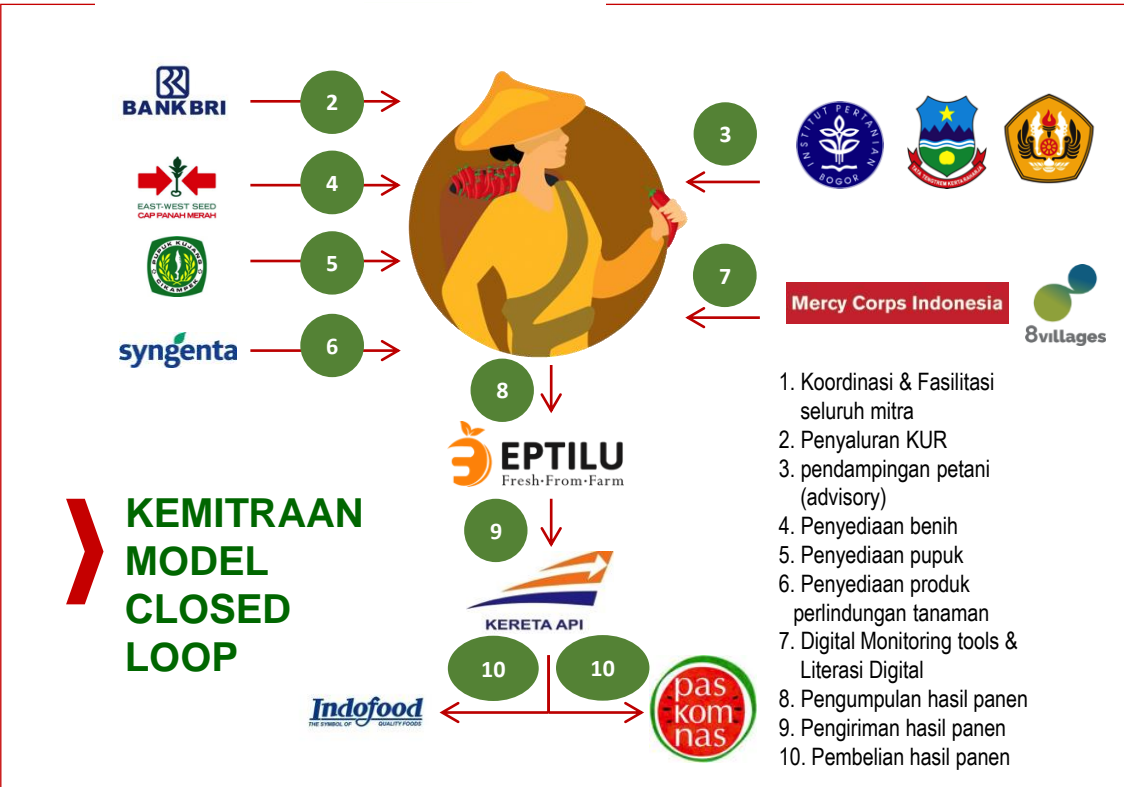
Komoditas	% Impor	Resiliensi rantai nilai	Risiko: Titik kritis pasokan	Langkah Kebijakan
Beras	3	<ul style="list-style-type: none"> <li>Industri modern beras tumbuh, relasi petani-pedagang kuat</li> </ul>	<ul style="list-style-type: none"> <li>Konversi-Alih fungsi lahan sawah</li> <li>Titik kritis Okt-Nov – Januari</li> </ul>	<ul style="list-style-type: none"> <li>Peningkatan produktivitas secara berkelanjutan</li> </ul>
Gula	60	<ul style="list-style-type: none"> <li>Gula rafinasi menjadi bantalan, langsung ke pasar</li> </ul>	<ul style="list-style-type: none"> <li>Fleksibilitas mengganggu petani</li> <li>Modernisasi industri lambat</li> </ul>	<ul style="list-style-type: none"> <li>Revitalisasi gula basis tebu dan peningkatan produktivitas</li> </ul>
Telur Ayam Ras	0	<ul style="list-style-type: none"> <li>Rantai nilai solid, relasi peternak swasta-pedagang</li> </ul>	<ul style="list-style-type: none"> <li>Titik kritis Ramadhan-HBKN.</li> <li>Sistem logistik bermasalah</li> </ul>	<ul style="list-style-type: none"> <li>Intervensi sistem logistik, fasilitasi dialog kemitraan</li> </ul>
Daging Ayam Ras	0	<ul style="list-style-type: none"> <li>Peran integrator, relasi peternak-swasta-industri-pasar</li> </ul>	<ul style="list-style-type: none"> <li>Titik kritis Ramadhan-HBKN.</li> <li>Sistem logistik bermasalah</li> </ul>	<ul style="list-style-type: none"> <li>Intervensi sistem logistik, persaingan usaha sehat</li> </ul>
Daging Sapi	70-75	<ul style="list-style-type: none"> <li>Penggemukan domestik</li> </ul>	<ul style="list-style-type: none"> <li>Ramadhan dan hari besar</li> </ul>	<ul style="list-style-type: none"> <li>Impor daging kerbau</li> </ul>
Bawang Merah	10-20	<ul style="list-style-type: none"> <li>Rantai nilai alternatif via digital</li> </ul>	<ul style="list-style-type: none"> <li>Musim hujan, produksi kecil</li> </ul>	<ul style="list-style-type: none"> <li>Perbaiki sistem distribusi</li> </ul>
Bawang Putih	95-97	<ul style="list-style-type: none"> <li>Program pengembangan di beberapa sentra produksi,</li> </ul>	<ul style="list-style-type: none"> <li>Risiko ketergantungan impor, impor terganggu, harga naik</li> </ul>	<ul style="list-style-type: none"> <li>Sinkronisasi RIPH &amp; SPI, review kebijakan wajib tanam</li> </ul>
Minyak Goreng	0	<ul style="list-style-type: none"> <li>Luas lahan sawit sebagai bahan baku masih bertambah</li> </ul>	<ul style="list-style-type: none"> <li>Kecenderungan harga TBS turun</li> <li>Minyak curah menjadi kemasan</li> </ul>	<ul style="list-style-type: none"> <li>Kepastian pasokan insentif petani sawit, peremajaan dll</li> </ul>
Cabai Merah	5-20	<ul style="list-style-type: none"> <li>Lahan pekarangan, industri naik, permintaan naik.</li> </ul>	<ul style="list-style-type: none"> <li>Musim panen, harga anjlok, terjadi di akhir musim hujan</li> </ul>	<ul style="list-style-type: none"> <li>Stabilisasi harga antar-musim untuk antisipasi inflasi</li> </ul>
Cabai Rawit	5-15	<ul style="list-style-type: none"> <li>Pemanfaatan pekarangan, pada skala rumah tangga .</li> </ul>	<ul style="list-style-type: none"> <li>Musim panen, harga anjlok. Musim hujan, produksi turun</li> </ul>	<ul style="list-style-type: none"> <li>Antisipasi dampak inflasi, perbaikan benih dan varietas</li> </ul>

# Pengembangan Model: *Inclusive Closed Loop System*

Kolaborasi ABGC dari hulu ke hilir



Sumber: Firdaus, 2021



# Penutup: Strategi dan Perubahan Kebijakan ke Depan

1. Strategi peningkatan efektivitas smart supply chain management (SSCM) dapat dimulai dari prioritas determinan efisiensi rantai nilai pangan jadi prioritas;
2. Antisipasi krisis pangan memerlukan penguatan kemandirian pangan untuk meredam inflasi tinggi yang dipicu komponen *volatile food* tinggi, pertanian presisi, *climate-smart*, digitalisasi rantai nilai, perbaikan strategi R&D & ekosistem inovasi;
3. Kerjasama antar daerah (KAD) amat krusial dalam konteks manajemen stok pangan, stabilisasi harga antardaerah dan antarwaktu, food losses & waste;
4. KAD dimulai dalam satu daerah, sentra produsen dengan sentra konsumen, daerah penyangga dan pengembangan dan daerah-daerah lain di Indonesia.
5. Informasi pendahuluan KAD perlu lengkap dan komprehensif: Pola tanam, dinamika surplus/defisit pangan, prakiraan iklim jangka menengah-panjang;
6. Penguatan resiliensi bisnis, pengembangan dan adaptasi model bisnis, kerjasama kemitraan, disesuaikan dengan kekhasan sistem nilai setempat;

**BUKU TERBARU**

**PERTANIAN BANTALAN RESESI:  
RESILIENSI SEKTOR SELAMA PANDEMI COVID-19**

**Telah  
Terbit!**



**Terima kasih**

**Dapatkan Buku**

Versi Cetak:  
[s.id/ba-cetak](https://s.id/ba-cetak)  
Versi E-Book:  
[s.id/ba-ebook](https://s.id/ba-ebook)

**Spesifikasi Produk**

vii + 237, 25 x 15 cm  
Terbit dalam dua versi,  
paperback dan e-book

**HARGA**  
**CETAK: RP110.000**  
**E-BOOK: RP74.800**