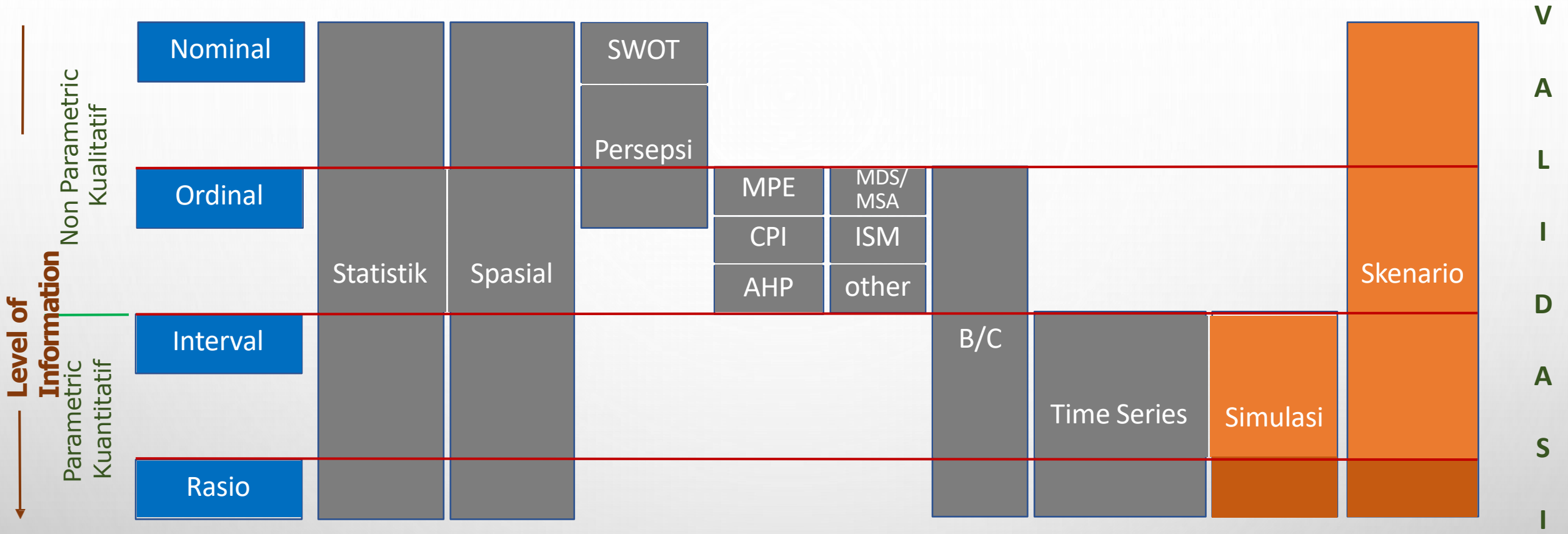
DYNAMIC MODEL OF TUBERCULOSIS ELIMINATION IN INDONESIA: CASE STUDY IN KUNINGAN, WEST JAVA, INDONESIA

DR. CASNAN, S.SI., M.SI

UNIVERSITAS MUHAMMADIYAH KUNINGAN

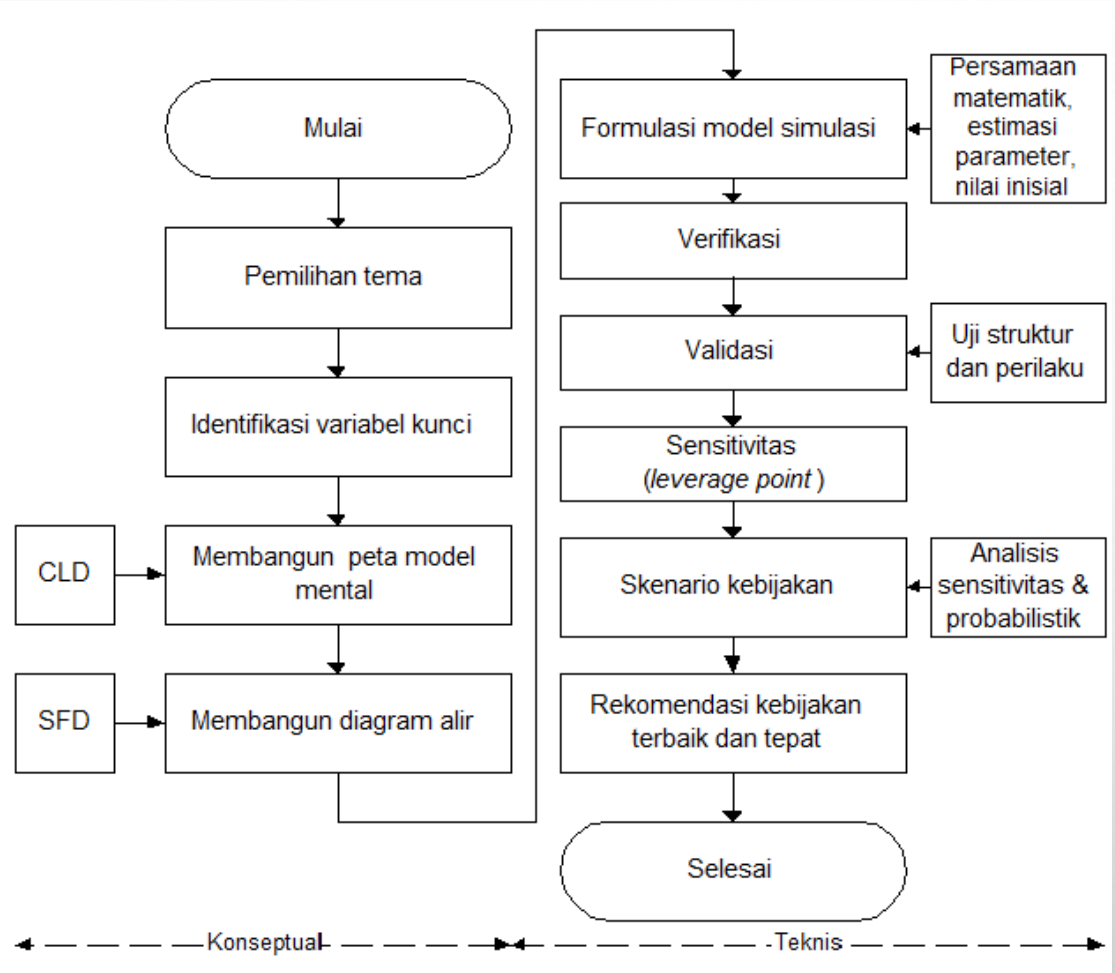
ANALISIS KUALITATIF DAN KUANTITATIF



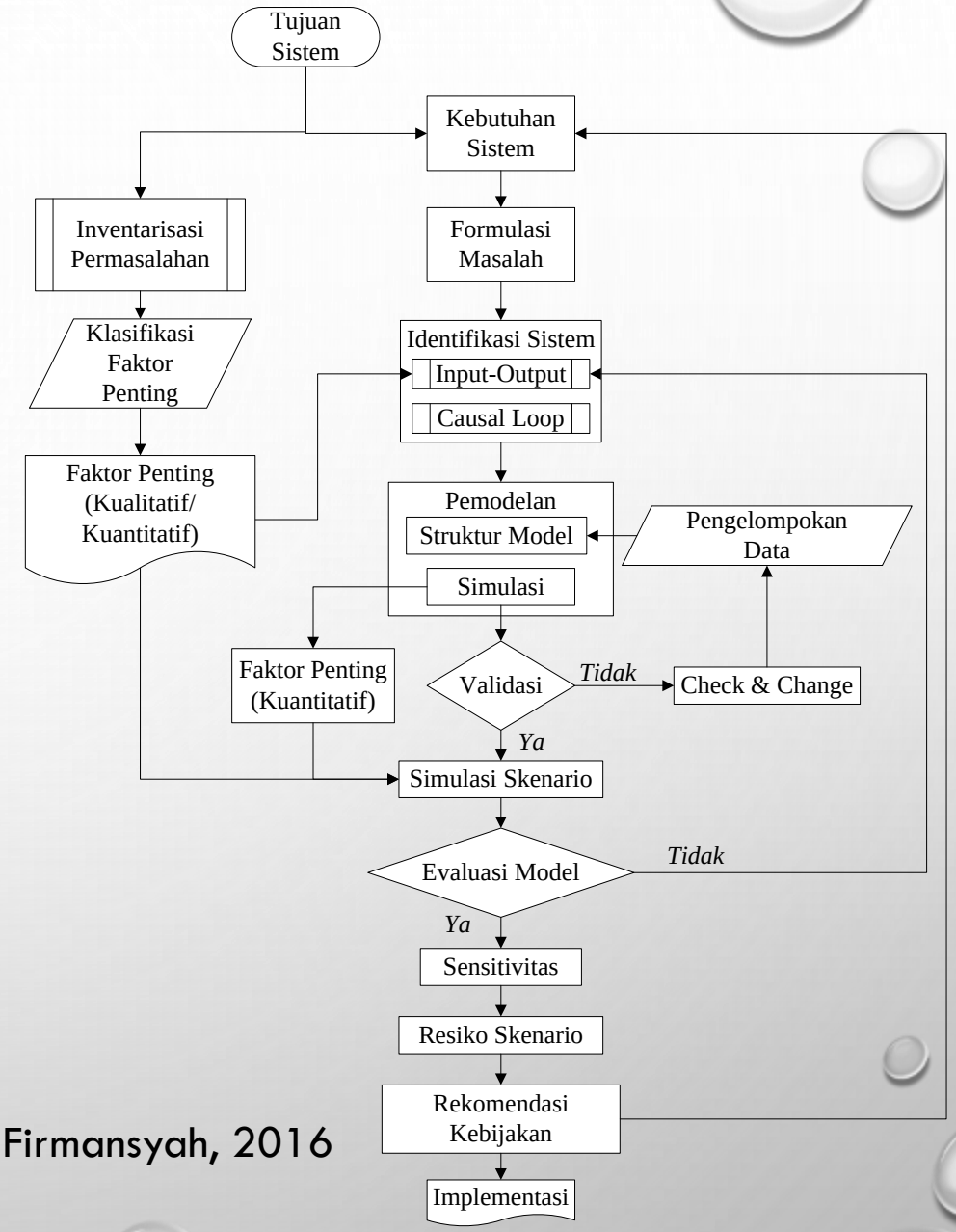



Firmansyah. 2016. Optimalisasi Analisis Data-Metode Kualitatif dan Kuantitatif . SDC Press

TAHAPAN SISTEM DINAMIK



Sterman, 2000



Firmansyah, 2016

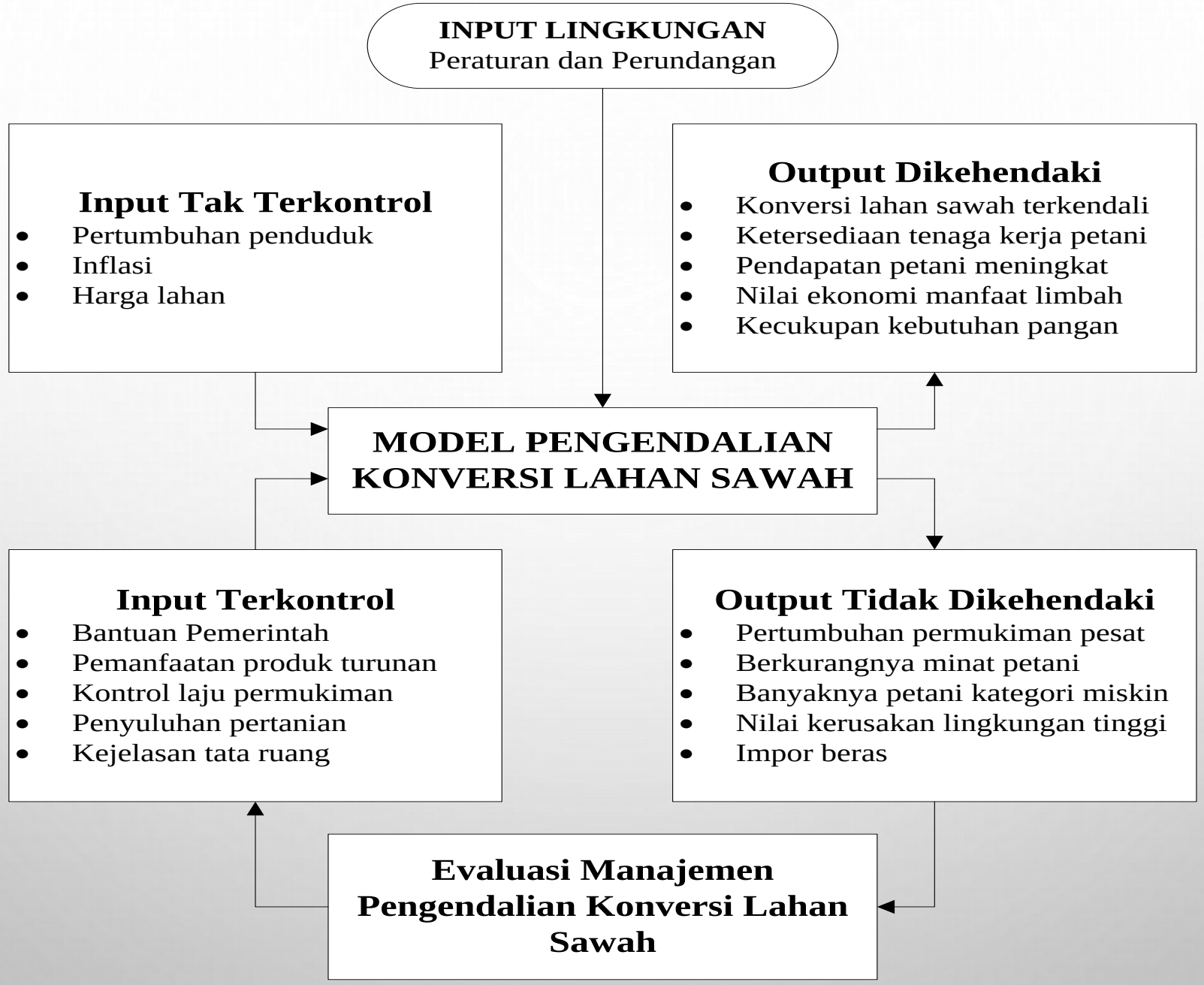
HAL YANG DIPERHATIKAN DALAM MEMBUAT SIMULASI MODEL

1. BATASAN SISTEM
2. PENENTUAN TUJUAN
3. STAKEHOLDER DAN KEBUTUHANNYA
4. BLACK BOX
5. CAUSAL LOOP DAN PENGELOMPOKAN VARIABEL (HUBUNGAN +/-)
6. PEMILIHAN TOOLS
7. VERIFIKASI DATA DAN KELENGKAPAN TIME SERIES, SERTA DATA GIVEN (ASUMSI).
8. MODIFIKASI DATA, JIKA TIDAK LENGKAP
8. RUNNING TRIAL BY ERROR, DENGAN PENGEMBANGAN BERTAHAP (HINDARI NILAI NEGATIF)
9. ART OF SIMULATION
10. VALIDASI MODEL
11. PENGECEKAN SATUAN
12. SKENARIO FAKTOR PENTING, INTEGRATED DENGAN ANALISIS LAINNYA?

ANALISIS KEBUTUHAN

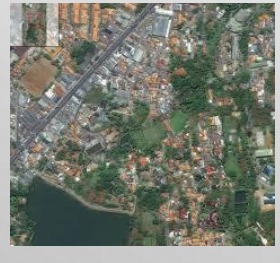
Analisis Kebutuhan	Pemerintah	Petani	Pelaku Usaha	LSM dan Peneliti	Lembaga Permodalan
• Penyuluhan Pertanian	√√	√√√	√√√	√	-
• Pola Pengelolaan	√√	√√√	-	-	√√
• Bantuan Pemerintah	√	√√√	√√	√√	√
• Stabilitas Harga	√√	√√√	√	-	√
• Pemanfaatan Limbah	√√√	√√√	√	√	√
• Pencetakan Lahan Sawah	√√√	-	√	-	-
• Industri Pengolah Hasil	√√	√√	√√√	√	-
• Saprodi	√	√√	√	√	-
• Penegakan Hukum	√√√	√	√√	-	√
• Lembaga Pemasaran	-	√√	-	-	√√

Tabel 11 Matriks kebutuhan sistem
Keterangan : √ = cukup penting; √√ = penting; √√√ = sangat penting



Black Box Diagram Model Pengendalian Konversi Lahan Sawah

Bagaimana jika di kaitkan...???



VALIDASI

- VALIDASI PERILAKU MODEL DILAKUKAN DENGAN MEMBANDINGKAN ANTARA BESAR DAN SIFAT KESALAHAN DAPAT DIGUNAKAN: 1) *ABSOLUTE MEAN ERROR* (AME) ADALAH PENYIMPANGAN (SELISIH) ANTARA NILAI RATA-RATA (*MEAN*) HASIL SIMULASI TERHADAP NILAI AKTUAL, 2) *ABSOLUTE VARIATION ERROR* (AVE) ADALAH PENYIMPANGAN NILAI VARIASI (*VARIANCE*) SIMULASI TERHADAP AKTUAL. BATAS PENYIMPANGAN YANG DAPAT DITERIMA ADA LAH ANTARA 1-10%.

$AME = [(\underline{SI} - \underline{AI})/\underline{AI}]$.....(1)

$\underline{SI}$ = SI N, DI MANA S = NILAI SIMULASI

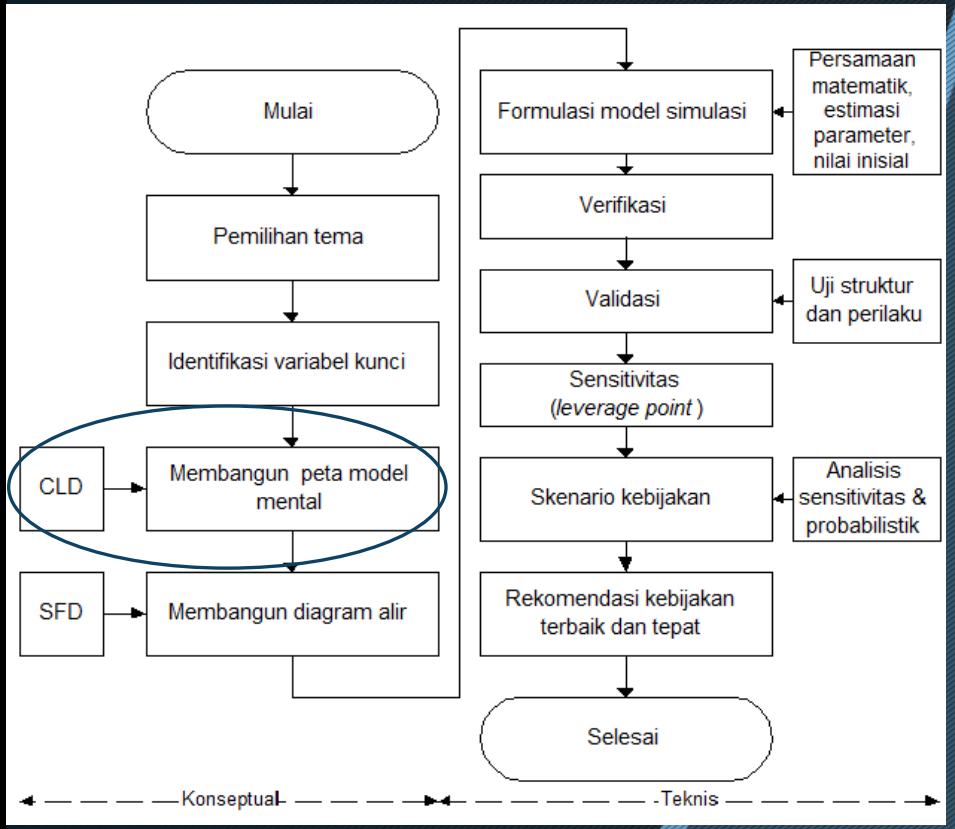
$\underline{AI}$ = AI N, DI MANA A = NILAI AKTUAL

N = INTERVAL WAKTU PENGAMATAN

$AVE = [(SS - SA)/SA]$.....(2)

$SS = ((SI - \underline{SI})^2 N)$ = DEVIASI NILAI SIMULASI

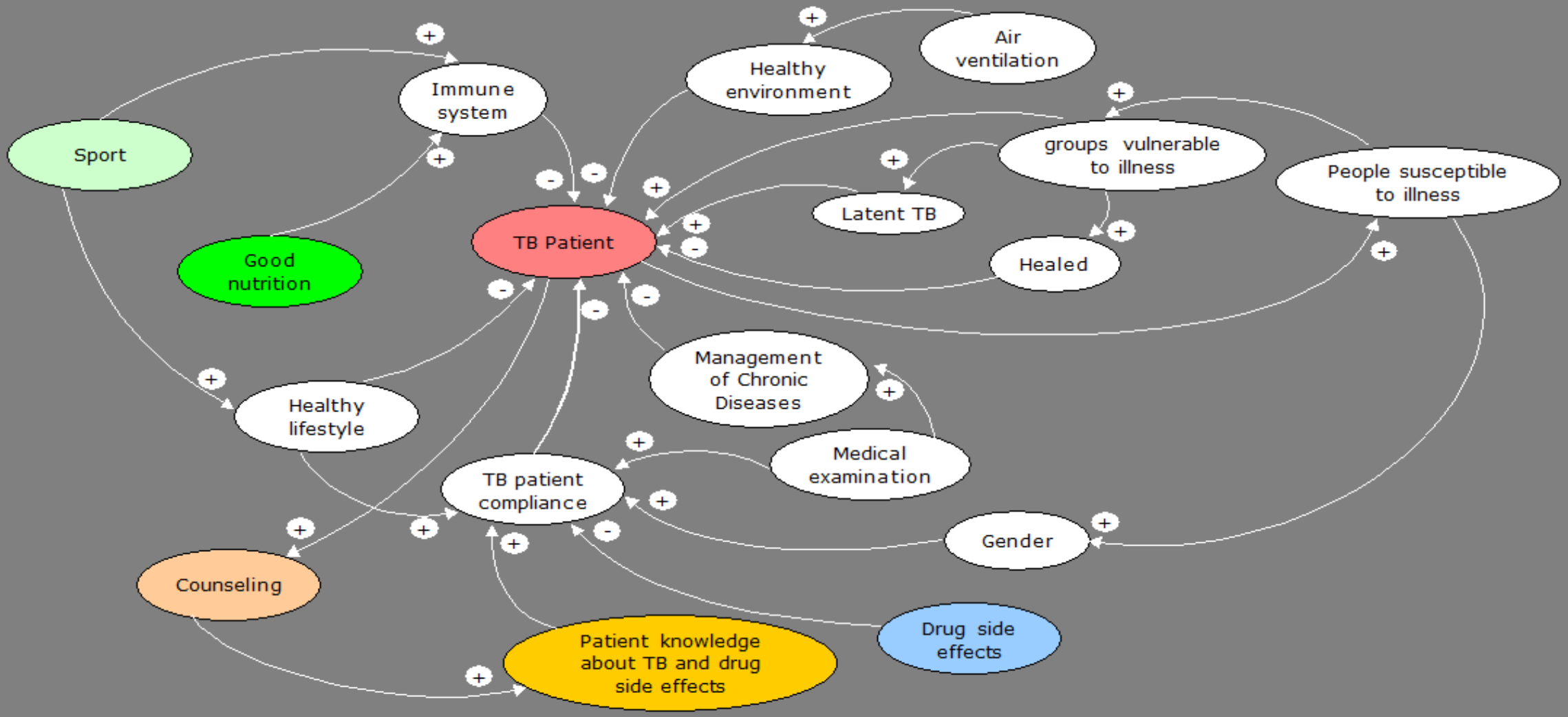
$SA = ((AI - \underline{AI})^2 N)$ = DEVIASI NILAI AKTUAL



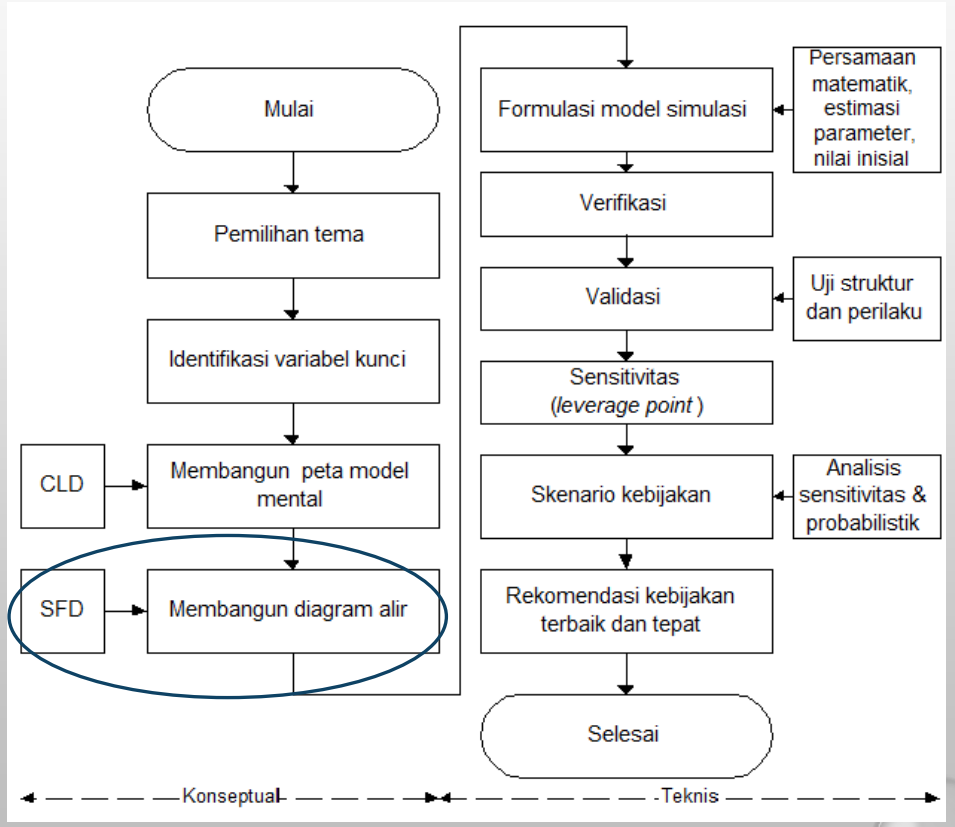
“Menyederhanakan Permasalahan” “Dengan System Thinking”

FGD PENYUSUNAN CAUSAL LOOP DIAGRAM

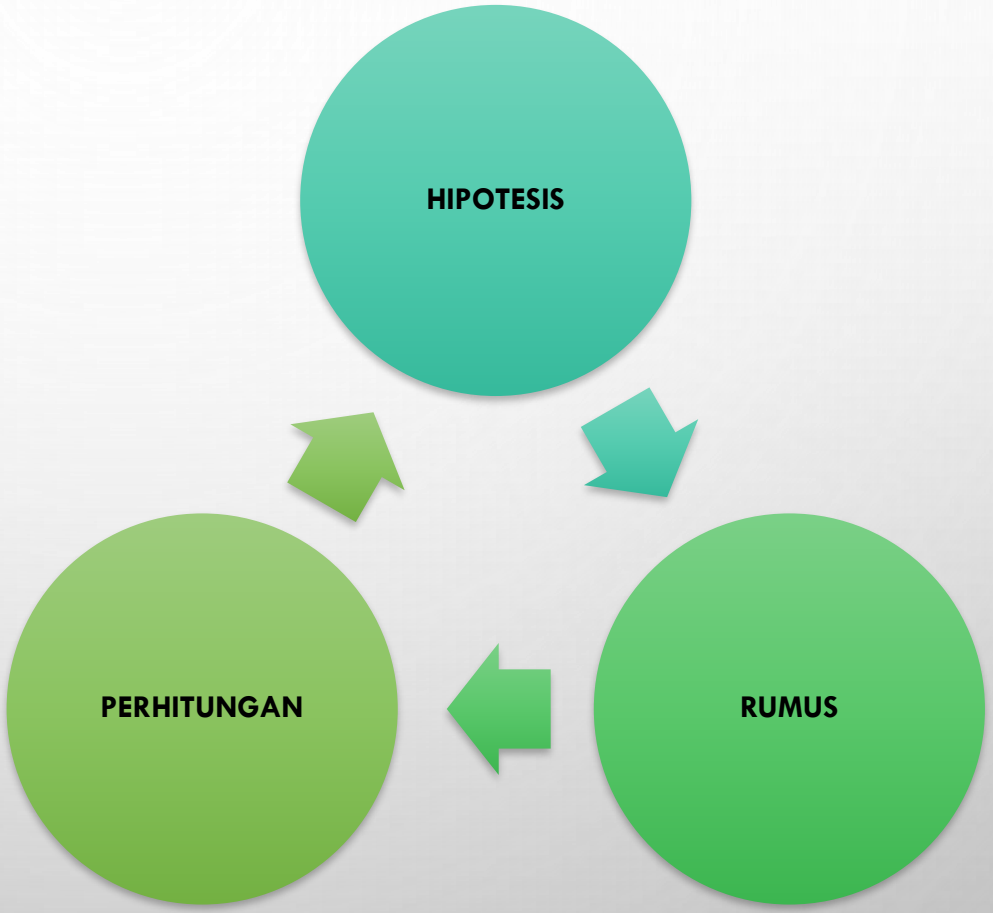
Dynamic Model of Tuberculosis Elimination in Indonesia: Case Study in Kuningan, West Java, Indonesia



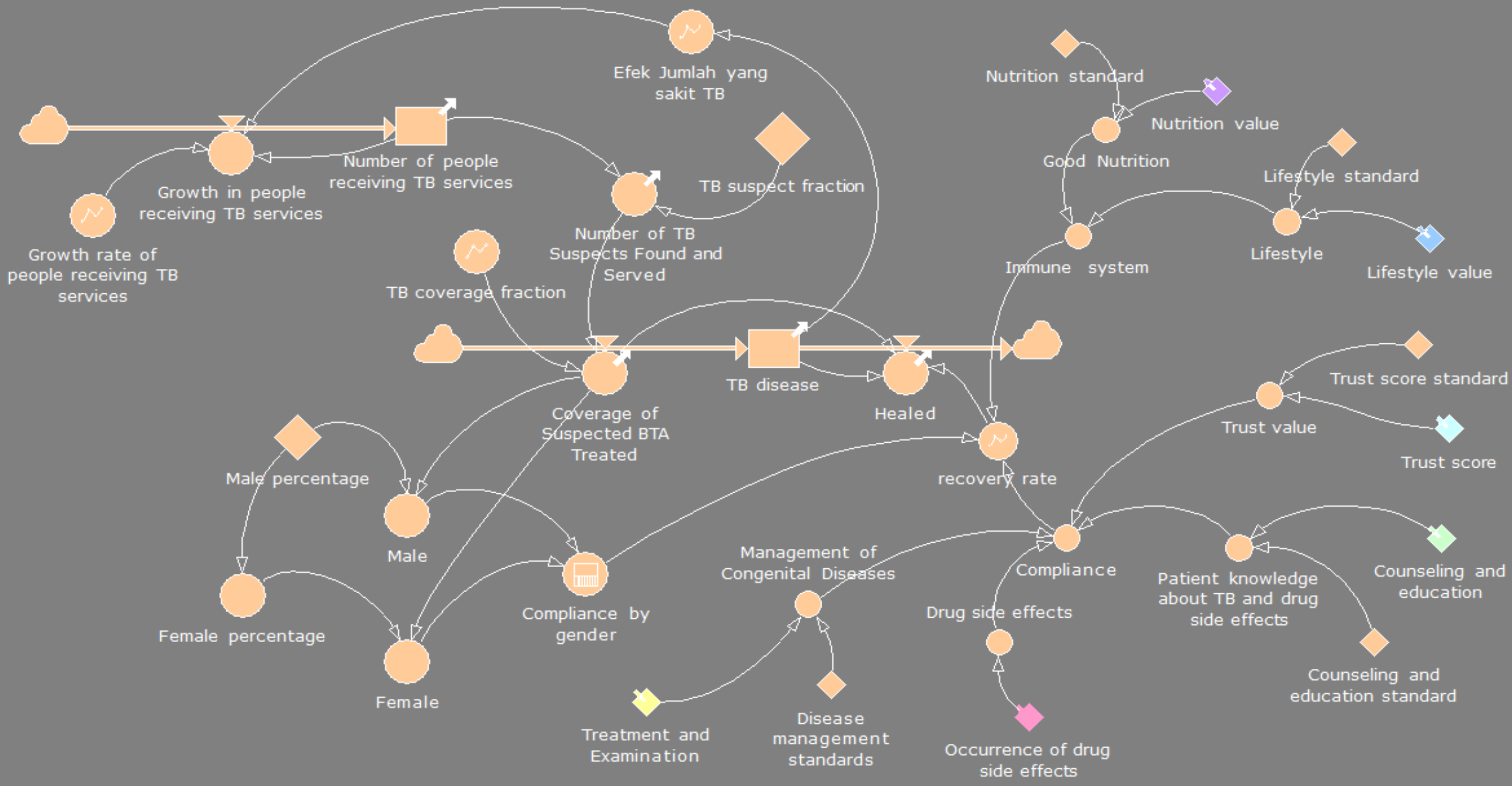
MEMBANGUN STOCK FLOW DIAGRAM



PENGUJIAN YANG BERHASIL



Dynamic Model of Tuberculosis Elimination in Indonesia: Case Study in Kuningan, West Java, Indonesia



Dynamic Model of Tuberculosis Elimination in Indonesia: Case Study in Kuningan, West Java, Indonesia

M E N U

Start Menu

Conseptual Model

Stock Flow Diagram

Restore

Lifestyle value

0 1 2 3 4

2

Nutrition value

0 1 2 3 4 5 6 7 8 9

5

Counseling and education

6 8 10 12 14 16 18 20 22 24

kali/year

12 kali/year

Trust score

0 50 100 150 200 250 300

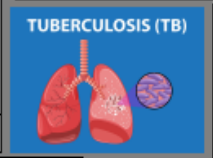
119

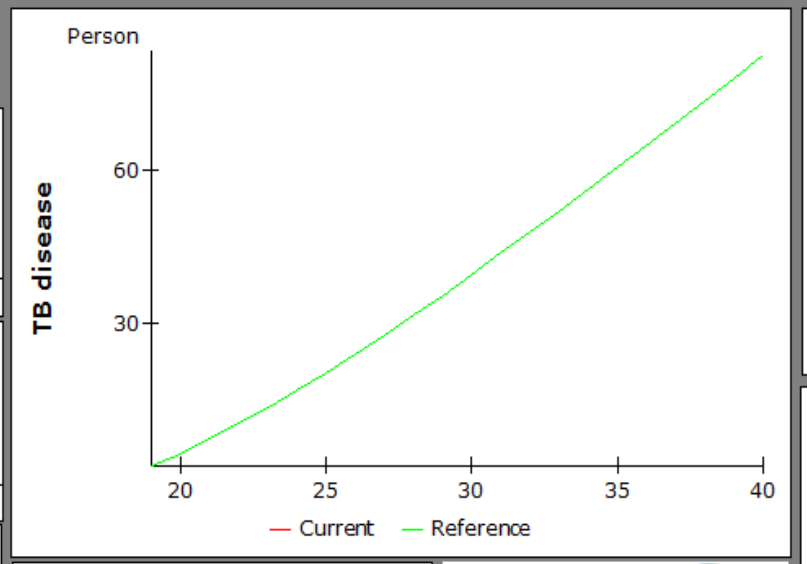
Treatment and Examination

4 6 8 10 12 14 16 18 20 22 24

kali/year

12 kali/year

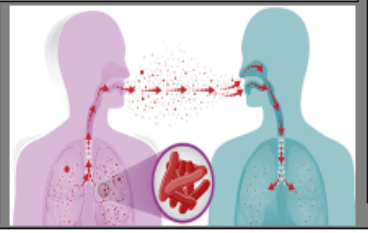


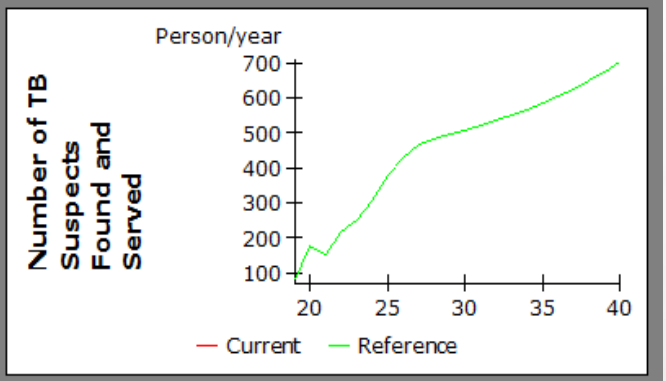


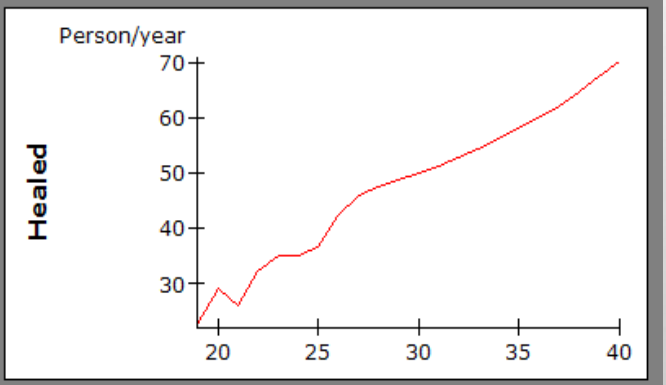
Occurrence of drug side effects

0 1 2 3 4 5

3.00







year	Number of pe	Number of TB Sus	TB disease	Coverage of Suspected BTA	Healed
19	78	78	2	25	23
20	176	176	4	32	29
21	153	153	7	29	26
22	217	217	10	35	32
23	253	253	13	38	35
24	308	308	17	38	35
25	377	377	20	40	37
26	431	431	24	46	42

TERIMAKASIH

CASNAN@UPMK.AC.ID

081389040141