Smart Farming
&
Science Fair

Joy Institute of Technology

Google ------ YST



Google Science Fair



YOUNG SCIENTISTS TANZANIA

sponsored by

BG TANZANIA





YST 2016 flashback

Galapagos island - Google





Finalists win a 25,000 scholarship, and the grand prize winner gets a 50,000 dollar scholarship plus a 10-day trip with a parent or guardian to the Galapagos Islands with National Geographic Expeditions

Ireland - YST

YOUNG SCIENTISTS TANZANIA
sponsored by BG TANZANIA
Irish Aid
Rialtas na hÉireann
Government of Ireland

YST 2016 flashback



Research topic

Smart Farm





Will Bill Gates' chickens end African poverty?

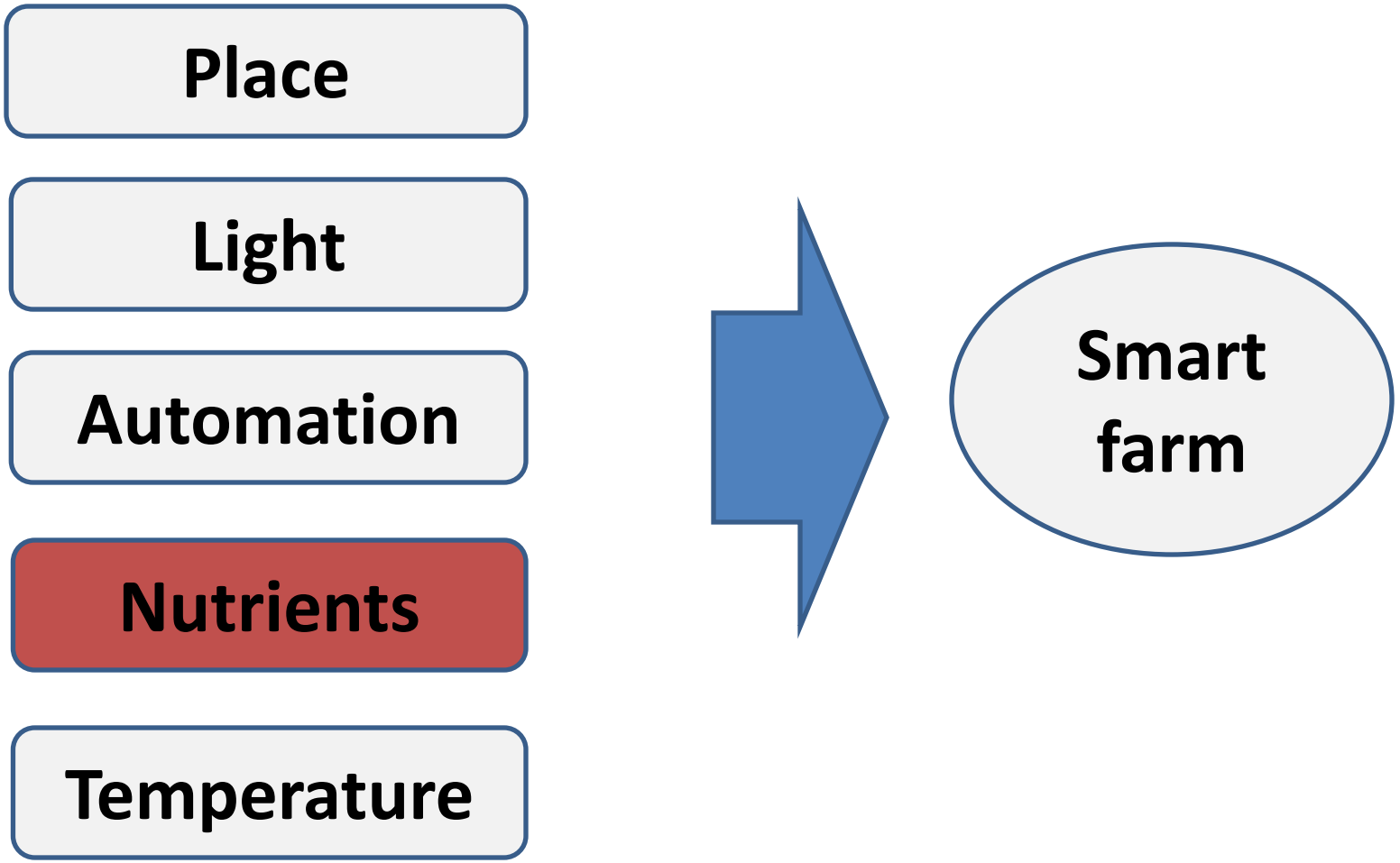


http://oxfamblogs.org/fp2p/will-bill-gates-chickens-end-african-poverty/

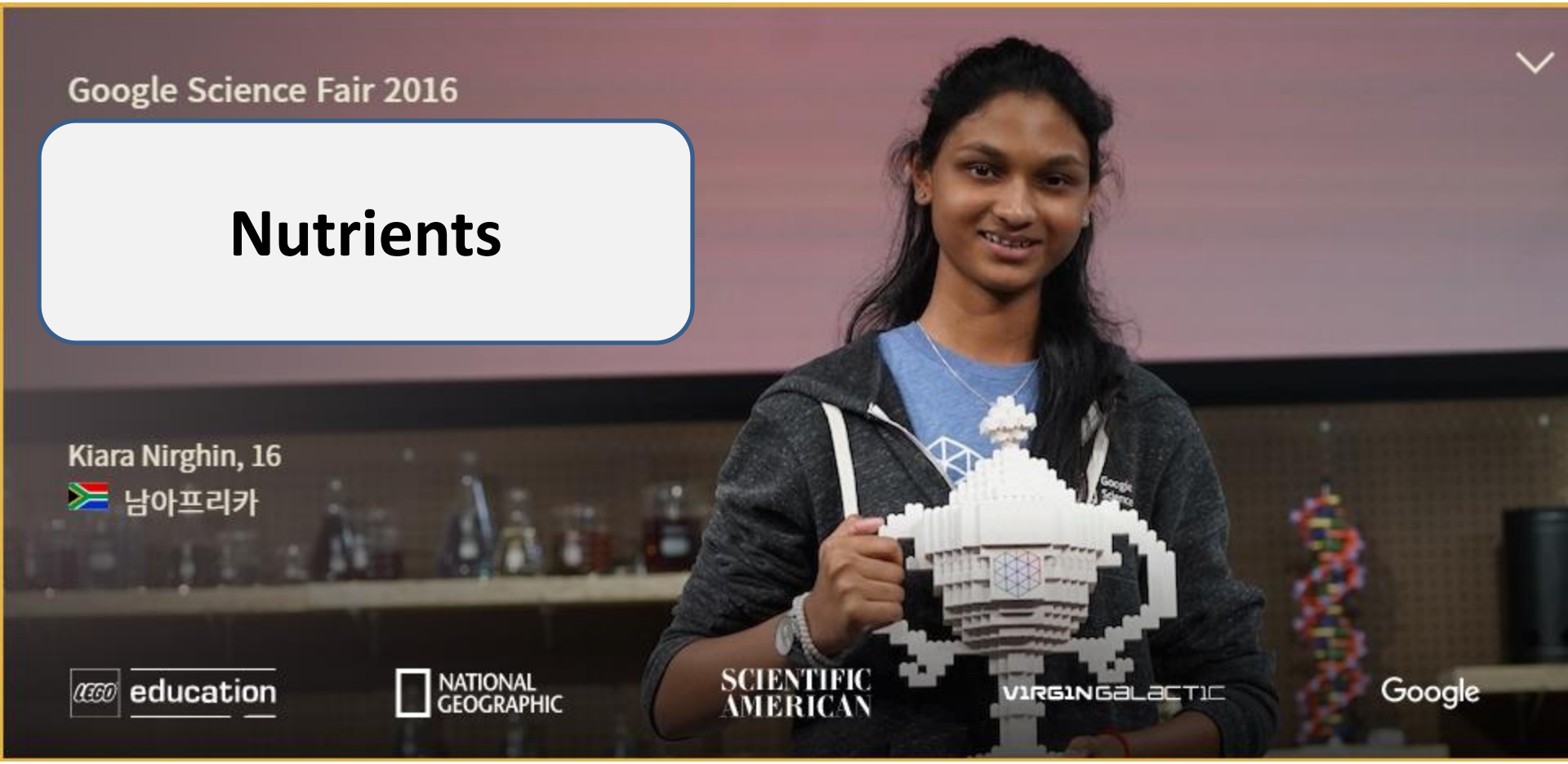
“It’s pretty clear to me that just about anyone who’s living in extreme poverty is better off if they have chickens,” wrote Gates

Melinda Gates also likes chickens and women. She calls chickens "the ATM of the poor," because they are easy to sell on short notice to cover day-to-day expenses.

Smart farm



Kiara’s super absorbent polymer











British nappy recyling



Google Science Fair

Combatting drought with a Low-Cost, biodegradable Superabsorbent Polymer made out of ORANGE PEELS

공유

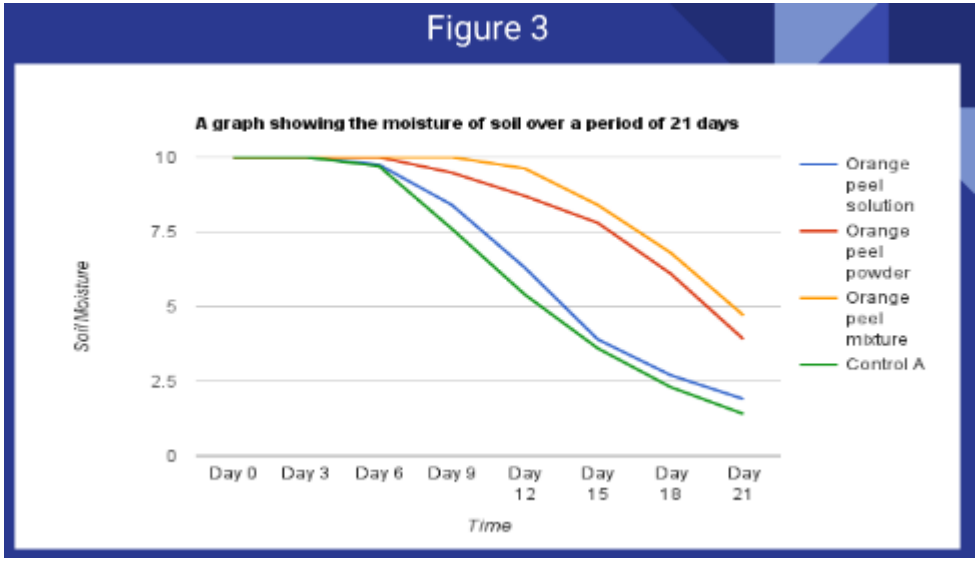
333

G+1

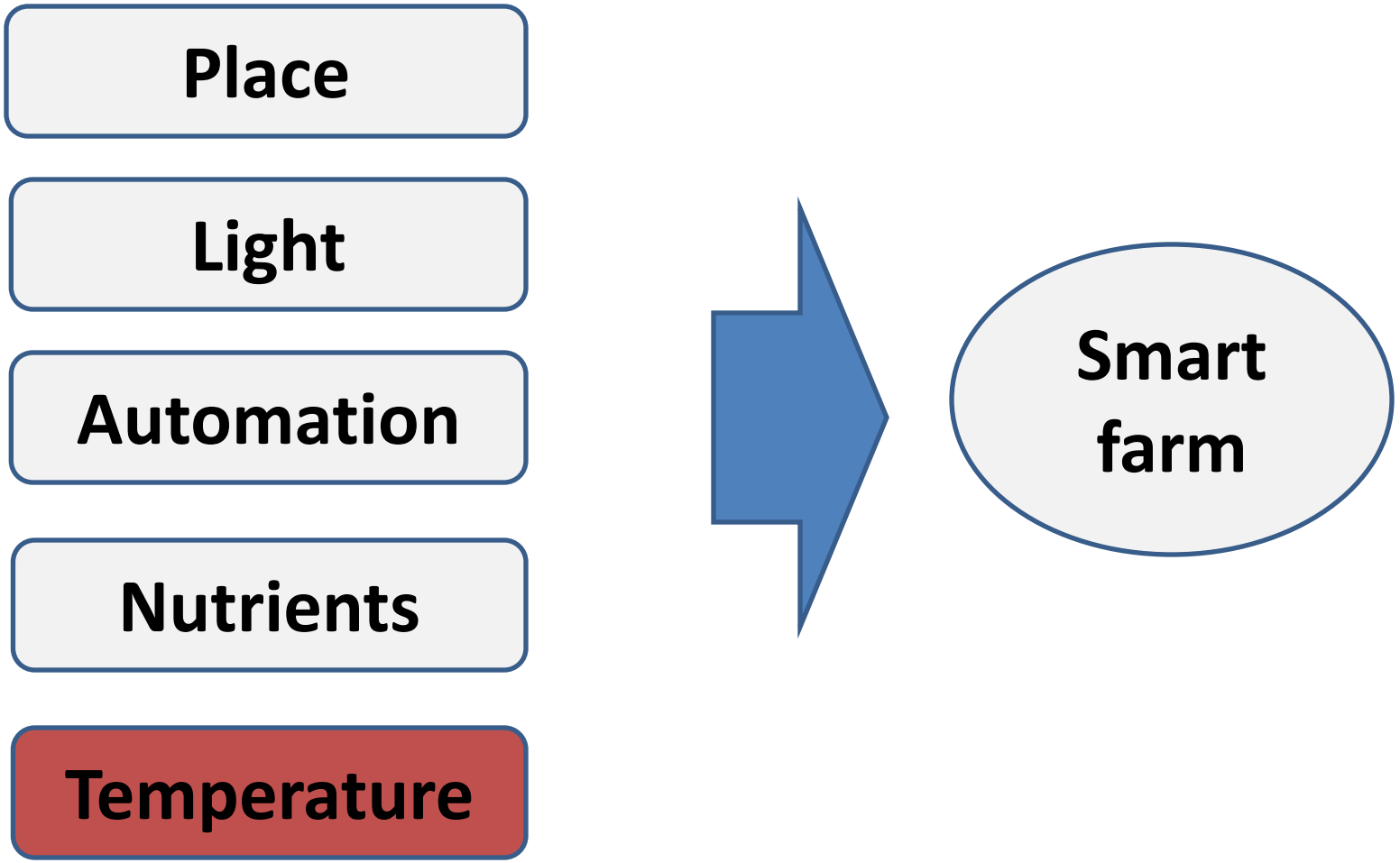




Figure 3


A graph showing the moisture of soil over a period of 21 days
10
7.5
5
2.5
0
Soil Moisture
Day 0
Day 3
Day 6
Day 9
Day 12
Day 15
Day 18
Day 21
Time
Orange peel solution
Orange peel powder
Orange peel mixture
Control A

PLANT



Temperature



Nadhra & Diana Egg Hatcher

DAY	TEMPERATURE(0C)
01	36.8
02	37
03	37.2
04	37.4
05	36
06	36.2
07	37.3
08	37.2
09	37
10	37.4
11	36
12	36.3
13	37.2
14	37.6
15	36.2
16	36.3
17	37.4
18	36.2
19	36.2
20	37.2
21	36.7



Mtawara returns



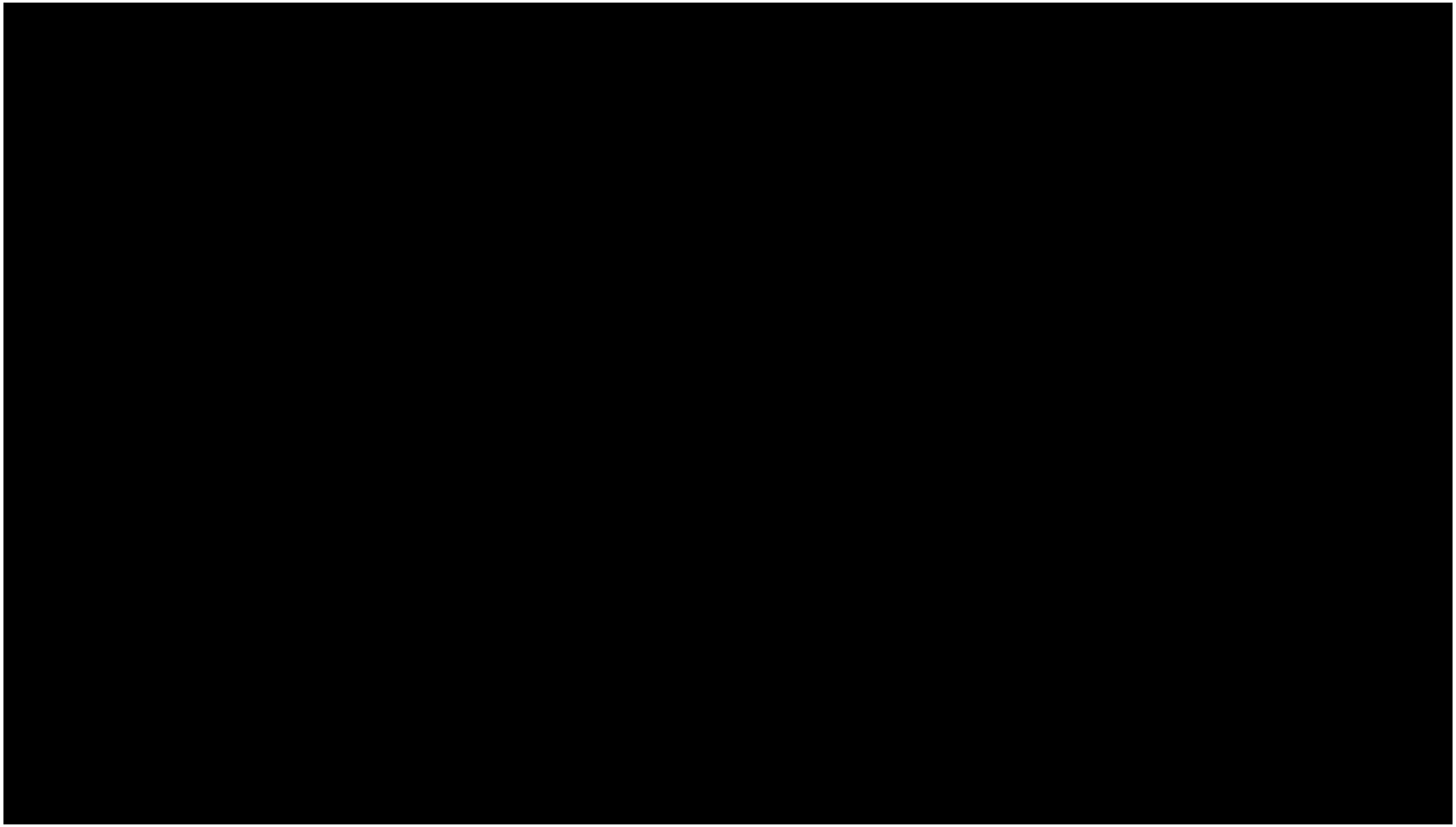
Poverty Is No Longer An Issue For Women In Mtwara Region

Poverty Is No Longer An Issue For Women In Mtwara Region

Nadhra Mresa and Diana Sosoka


DESKTOP

Mtawara return



https://vimeo.com/183240281/ce05acd45f

PLANT

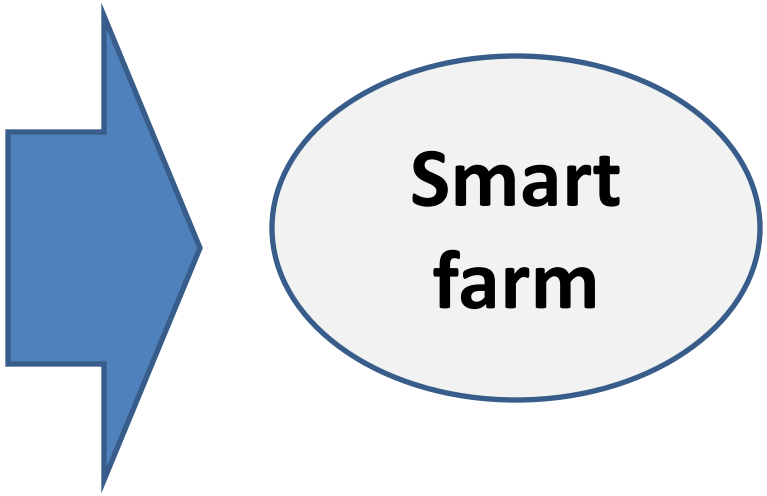
Place

Light

Automation

Nutrients

Temperature



Place



Outdoor



Green house



Growing bed



Vertical bed



Farm building

Low cost geodesic dome

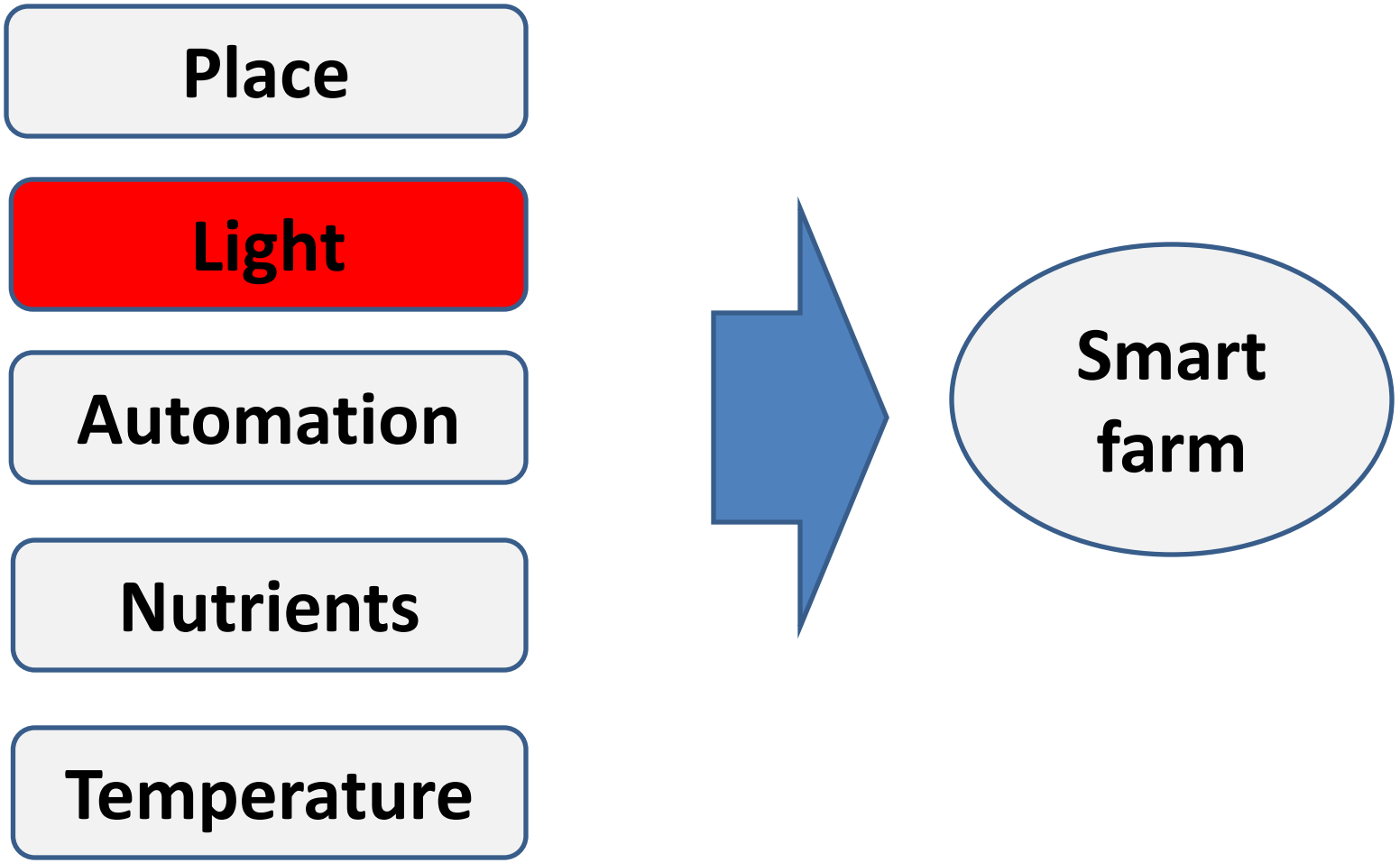








PLANT



Lighting



Natural

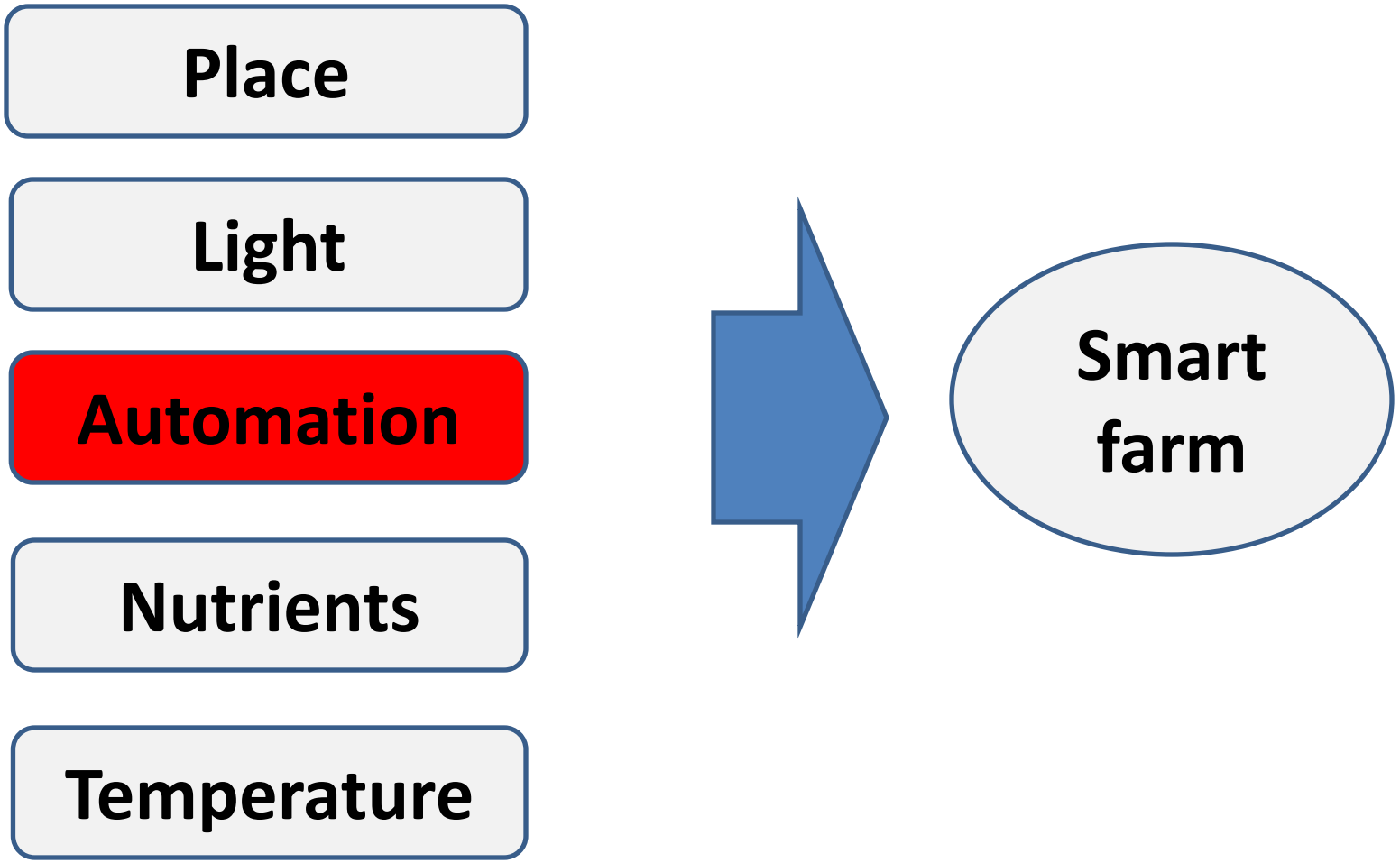


Mixed



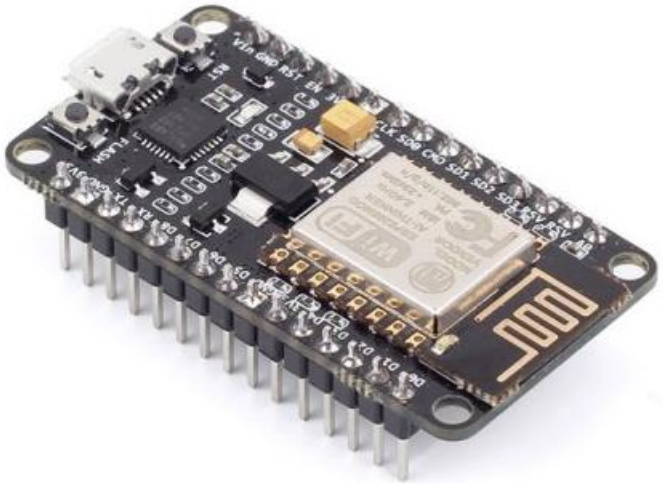
Artificial

PLANT

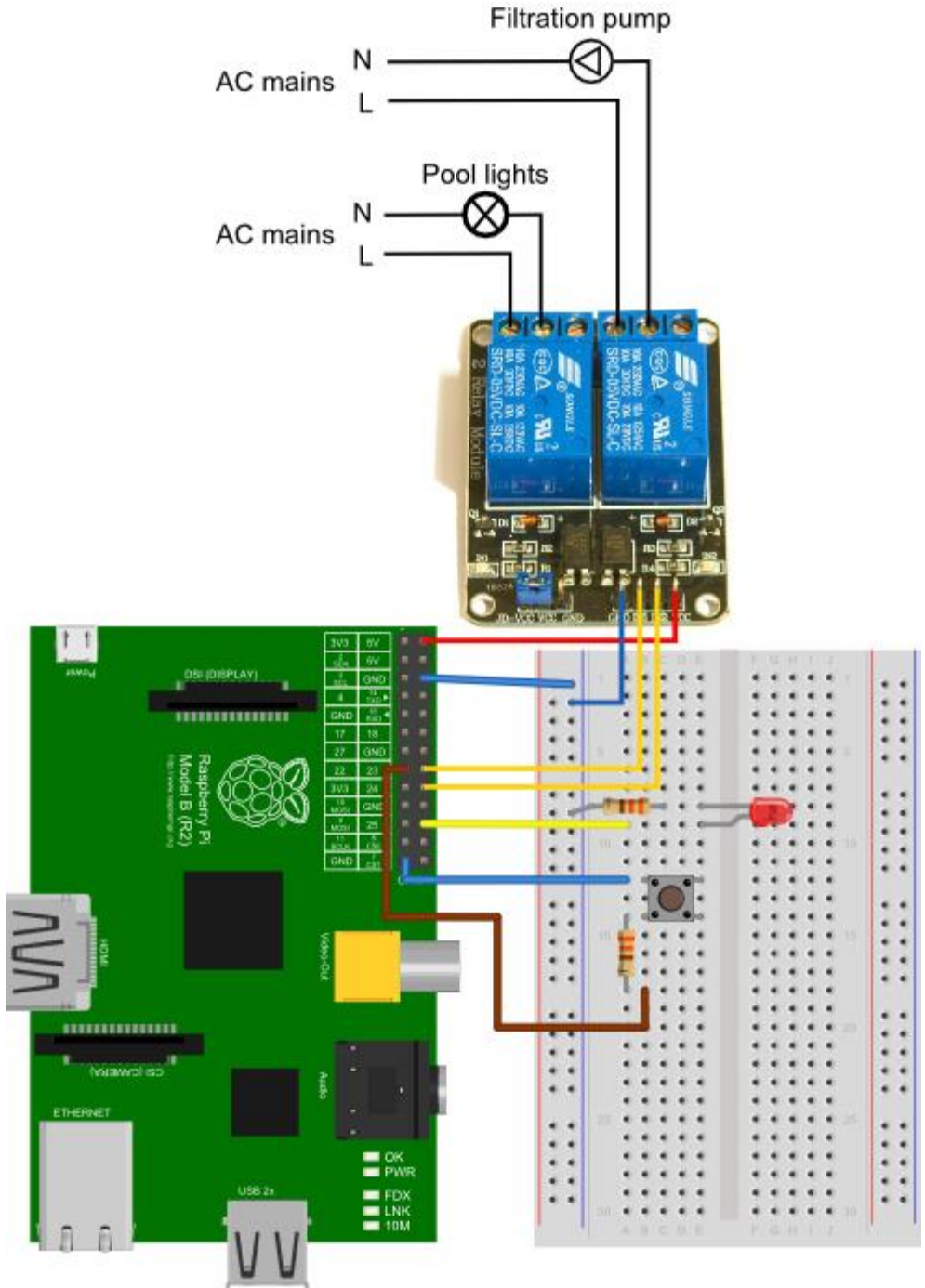


Automation

Arduino






Filtration pump
AC mains
N
L
Pool lights
AC mains
N
L
Raspberry Pi
Model B (R2)
DSI (DISPLAY)
HDMI
CSI (CAMERA)
Video Out
Audio
ETHERNET
USB 2x
OK
PWR
FDX
LNK
10M









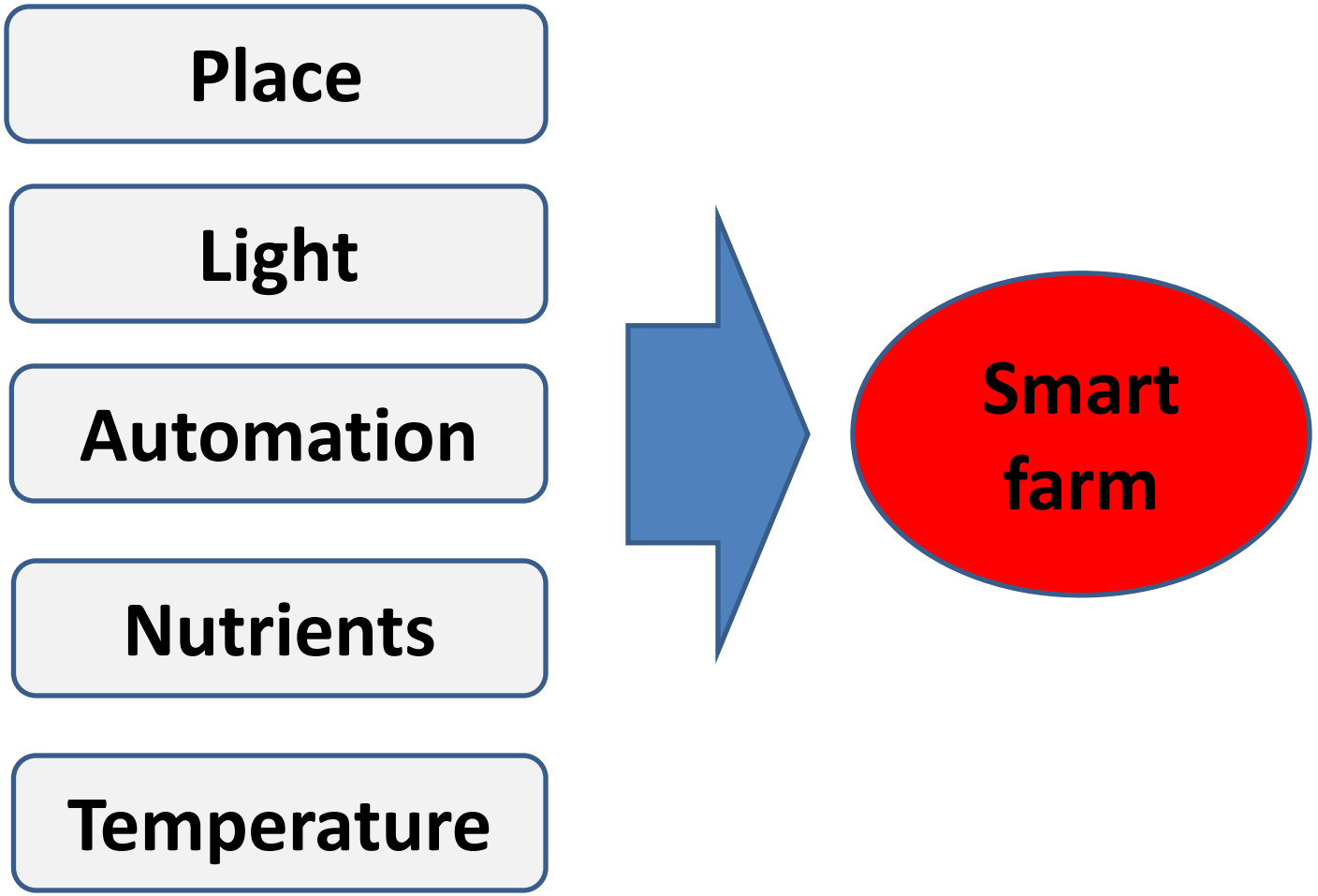








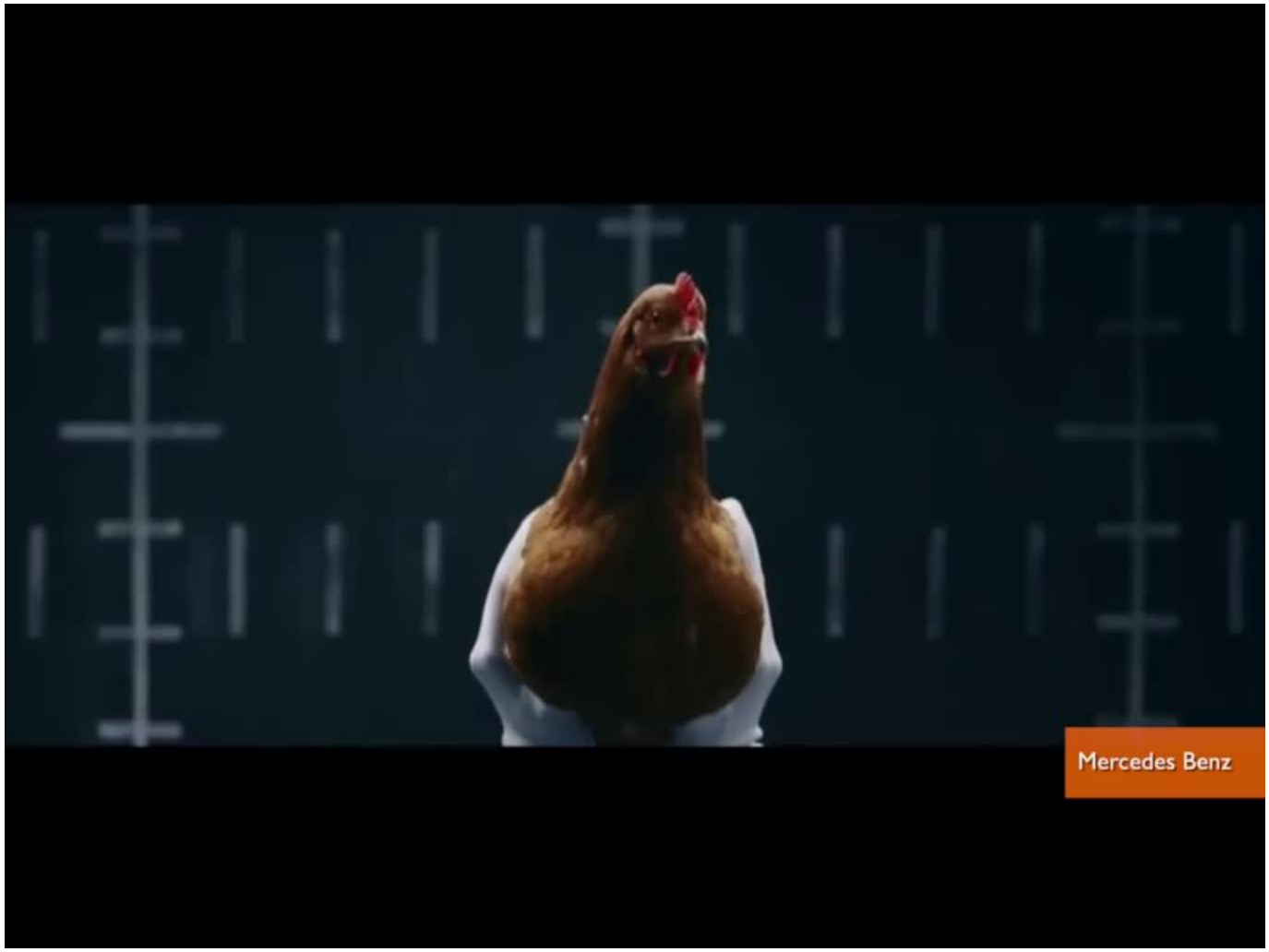
PLANT



Dave Gallus camera

- **Gallus** gallus domesticus




Mercedes Benz

Farmbot – Univ. Wisconsin



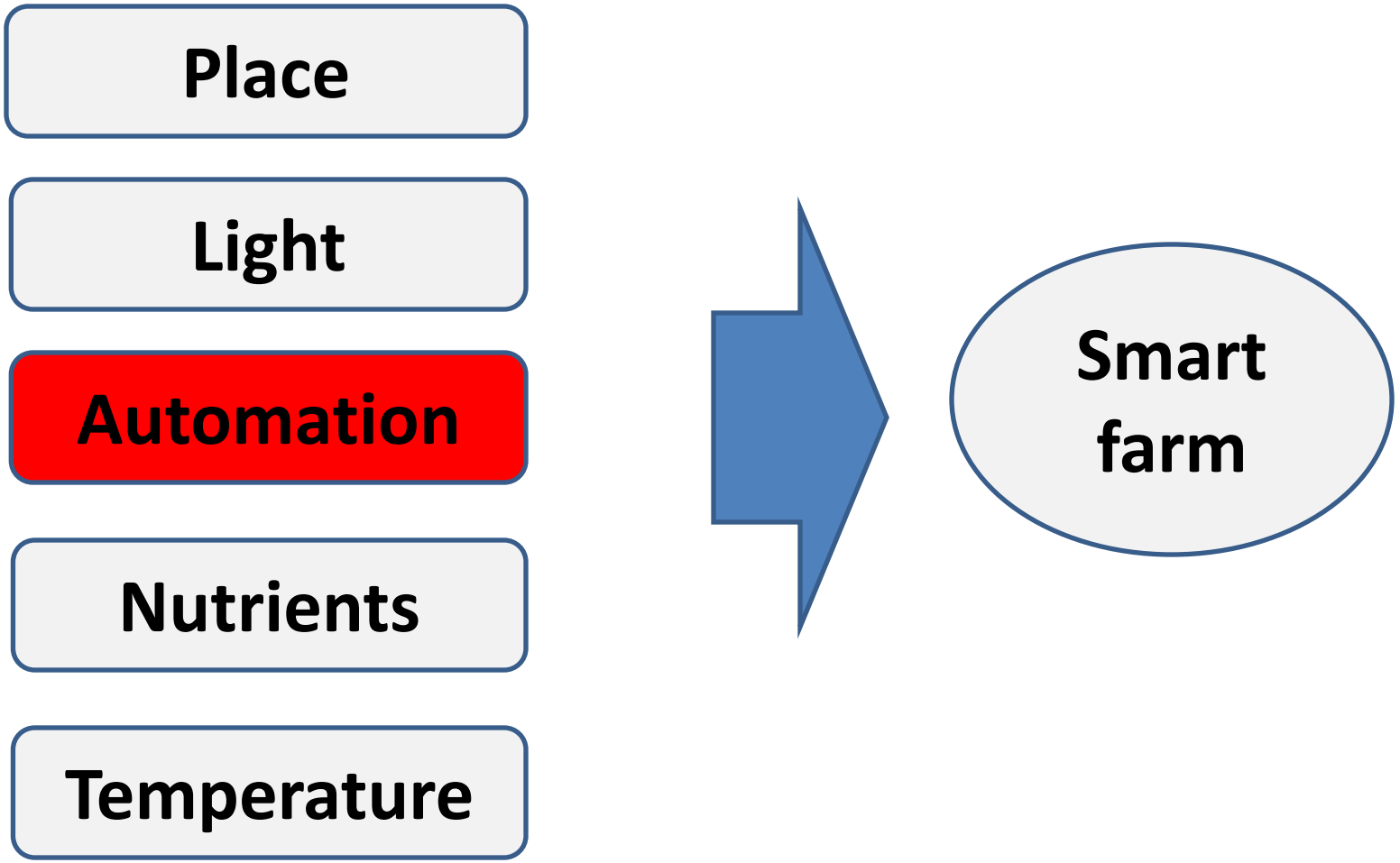
LSBS topic? –

robotic spider
for automatic cleaning





PLANT



Theo Jansen Versus Klann



Theo Jansen

- Dutch artist. In 1990, he began building large mechanisms out of PVC that are able to move on their own, known only as Strandbeest. The kinetic sculptures appear to walk.[1] His animated works are intended to be a fusion of art and engineering, and he has said that "The walls between art and engineering exist only in our minds.".



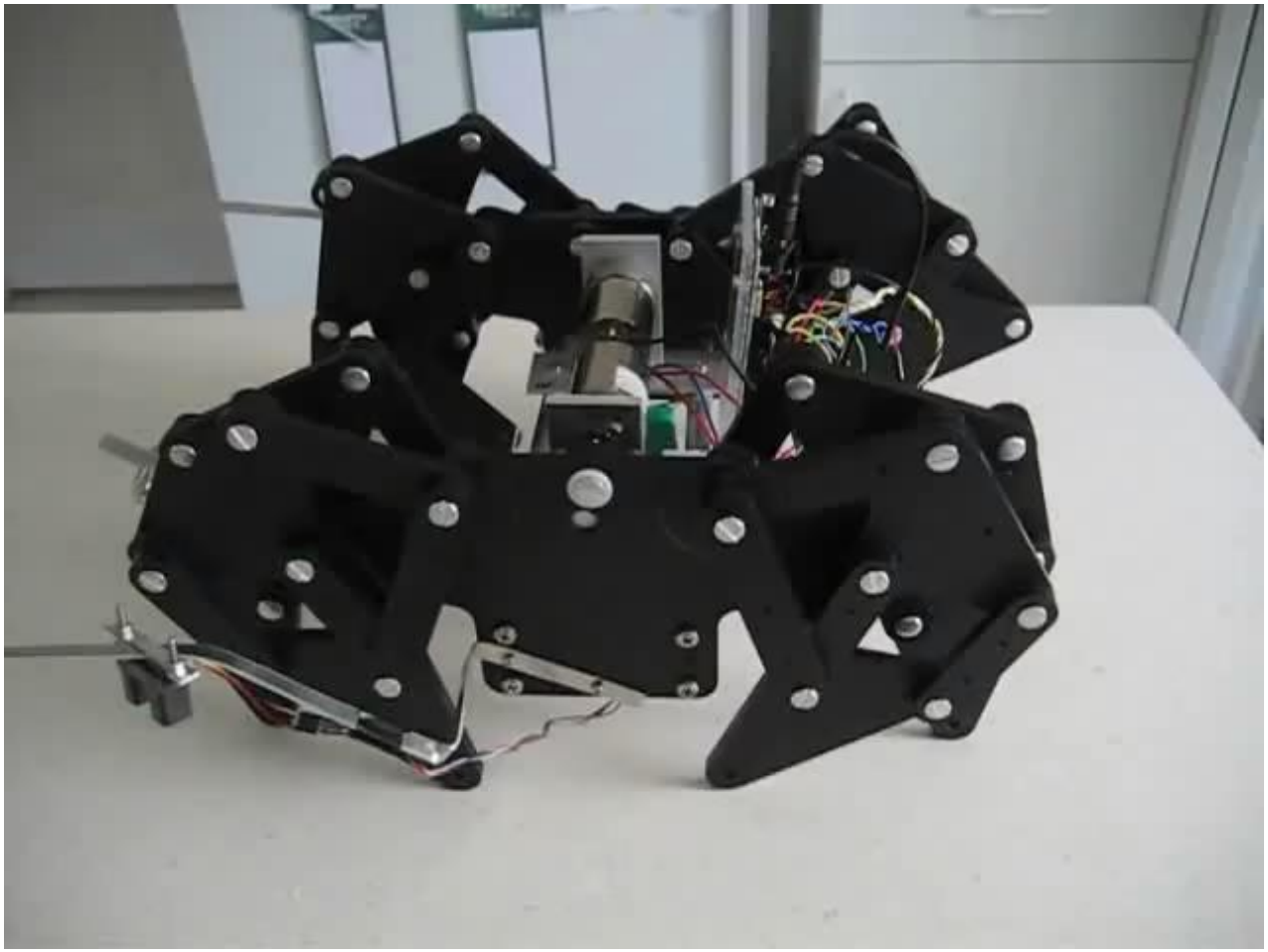
How Theo Jansen works?



Strandbeest



Small toy robot



Walking bike



Advanced spider robot



How to make spider robot?

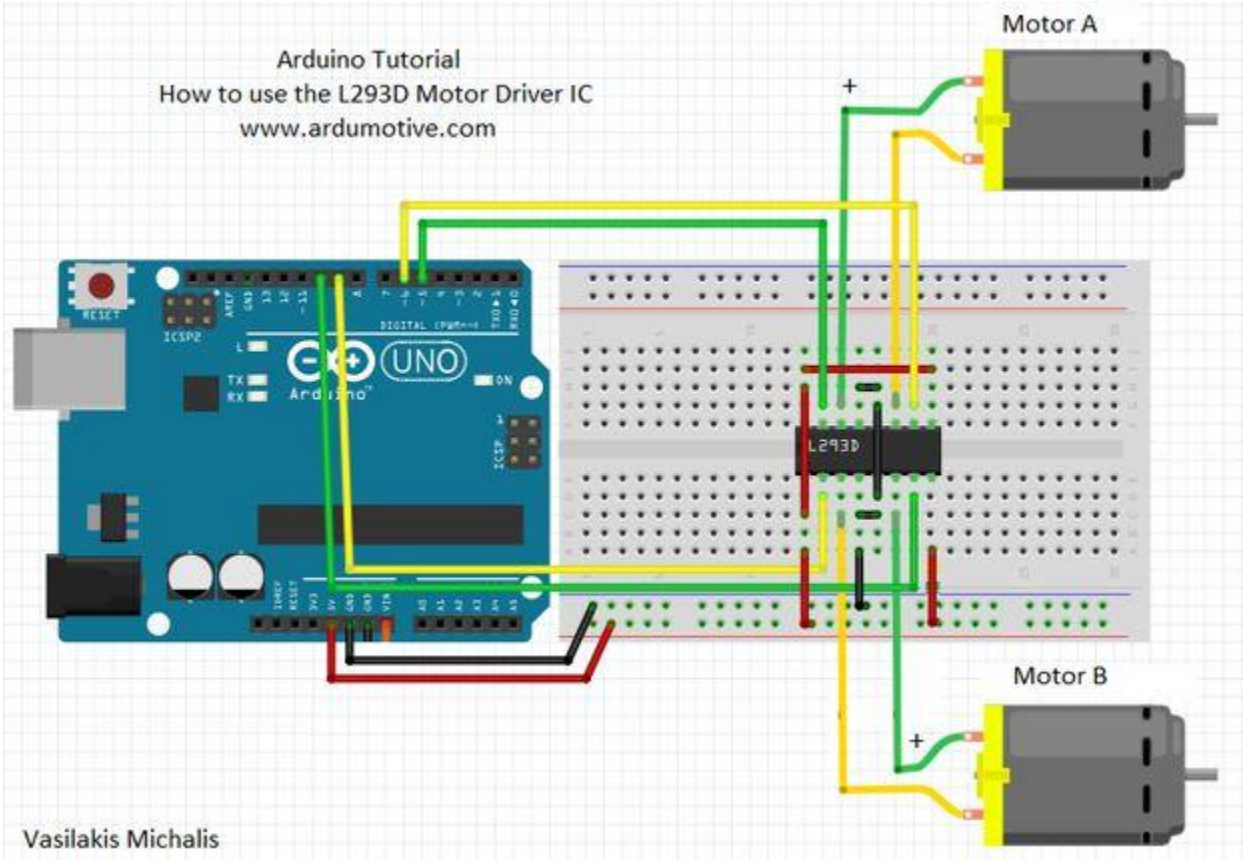


Arduino + Bluetooth module



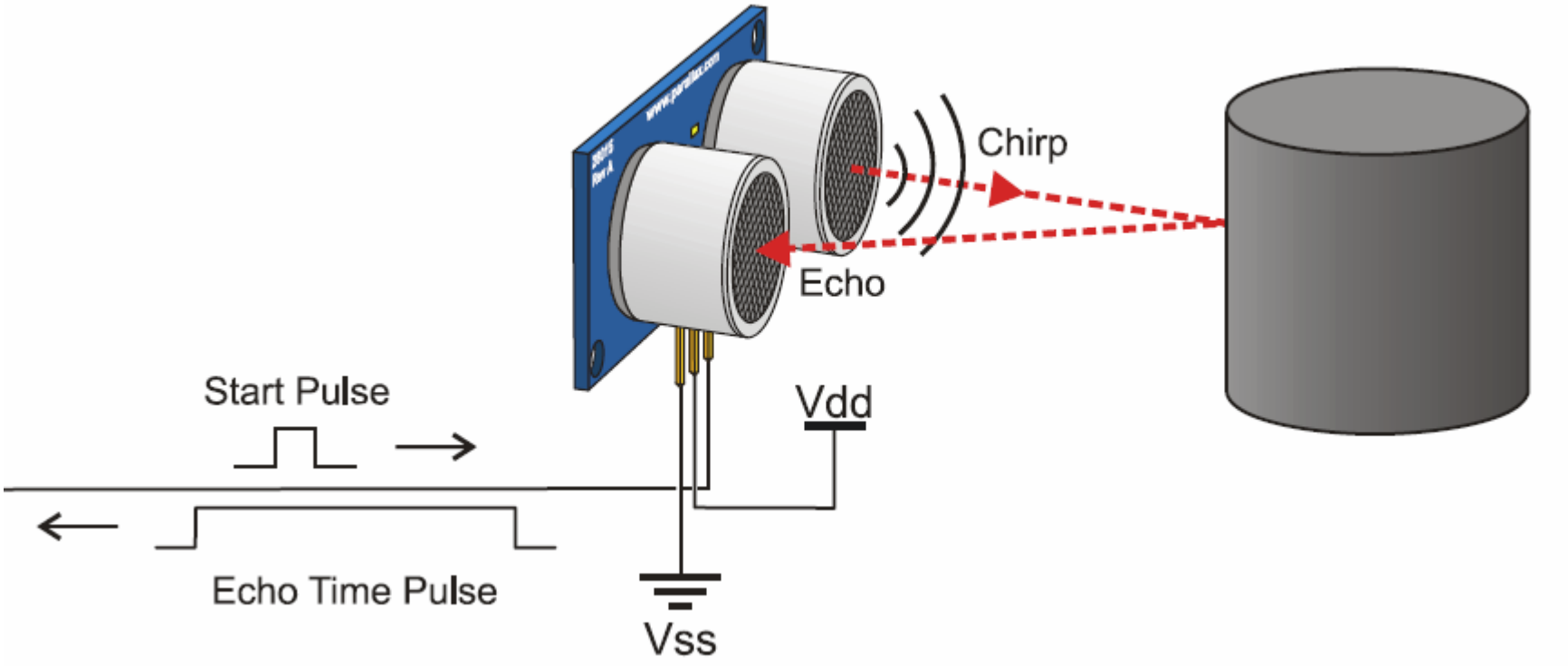


Motor driver



Ultrasonic sensor



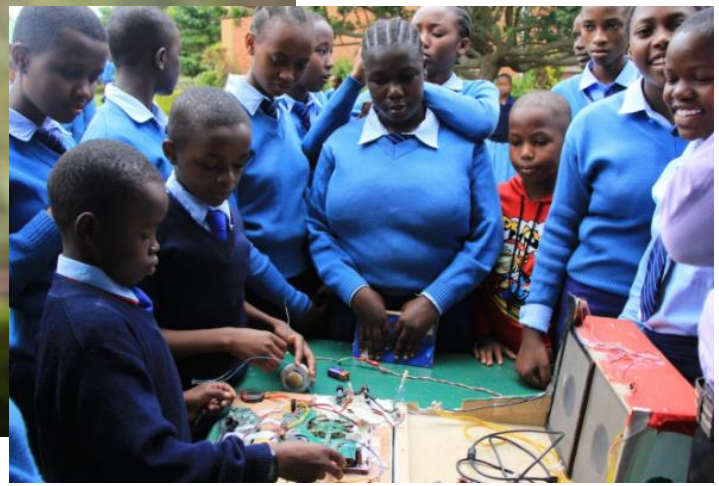

Chirp
Echo
Start Pulse
Vdd
Echo Time Pulse
Vss

Martin & Venance

The School of St Jude

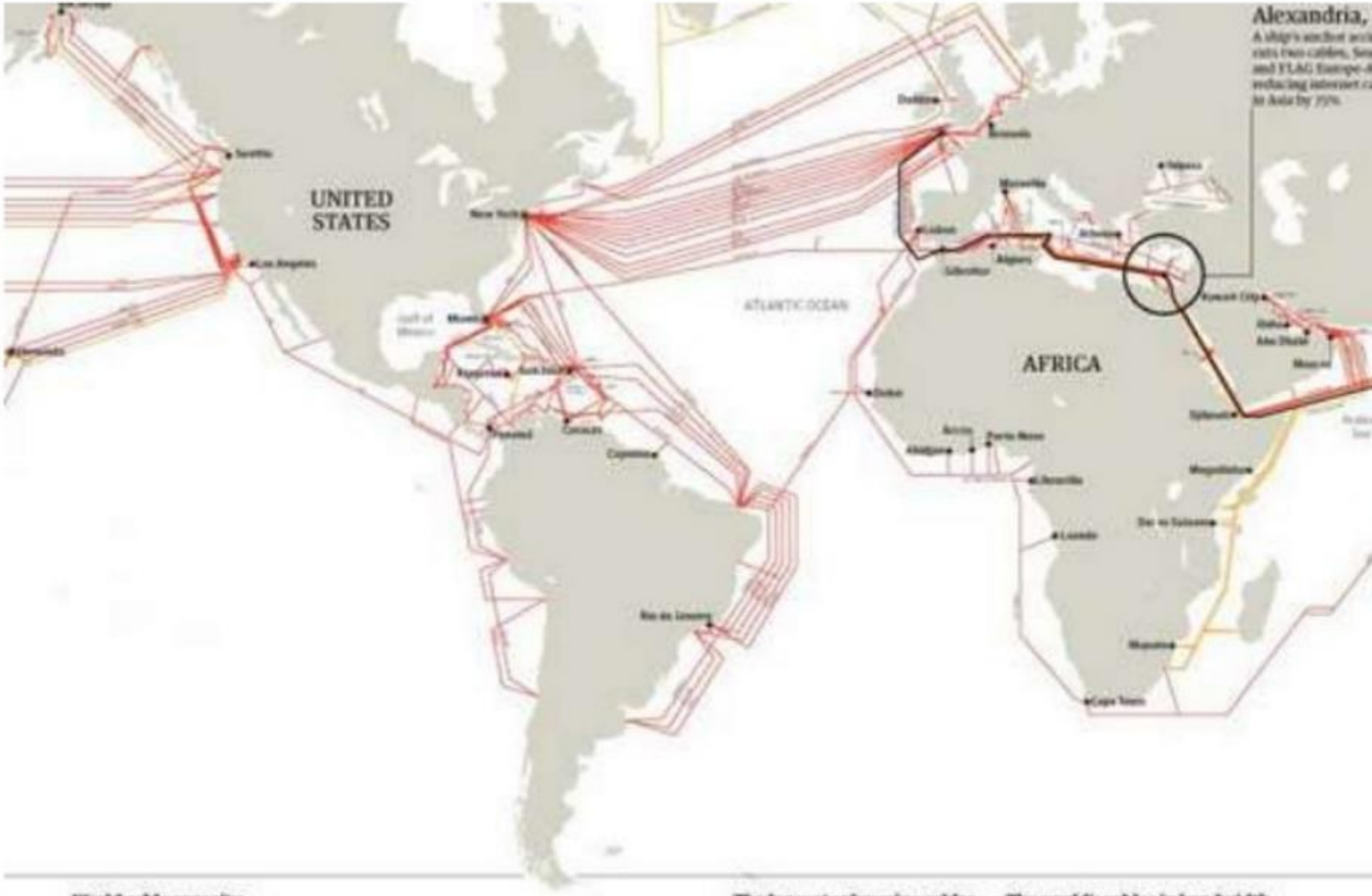
FIGHTING POVERTY THROUGH EDUCATION





RACHEL
Remote Area Community Hotspot for Education and Learning

Why? – Tangible.



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SCRATCH
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health guides
KA LITE

KIO kit



