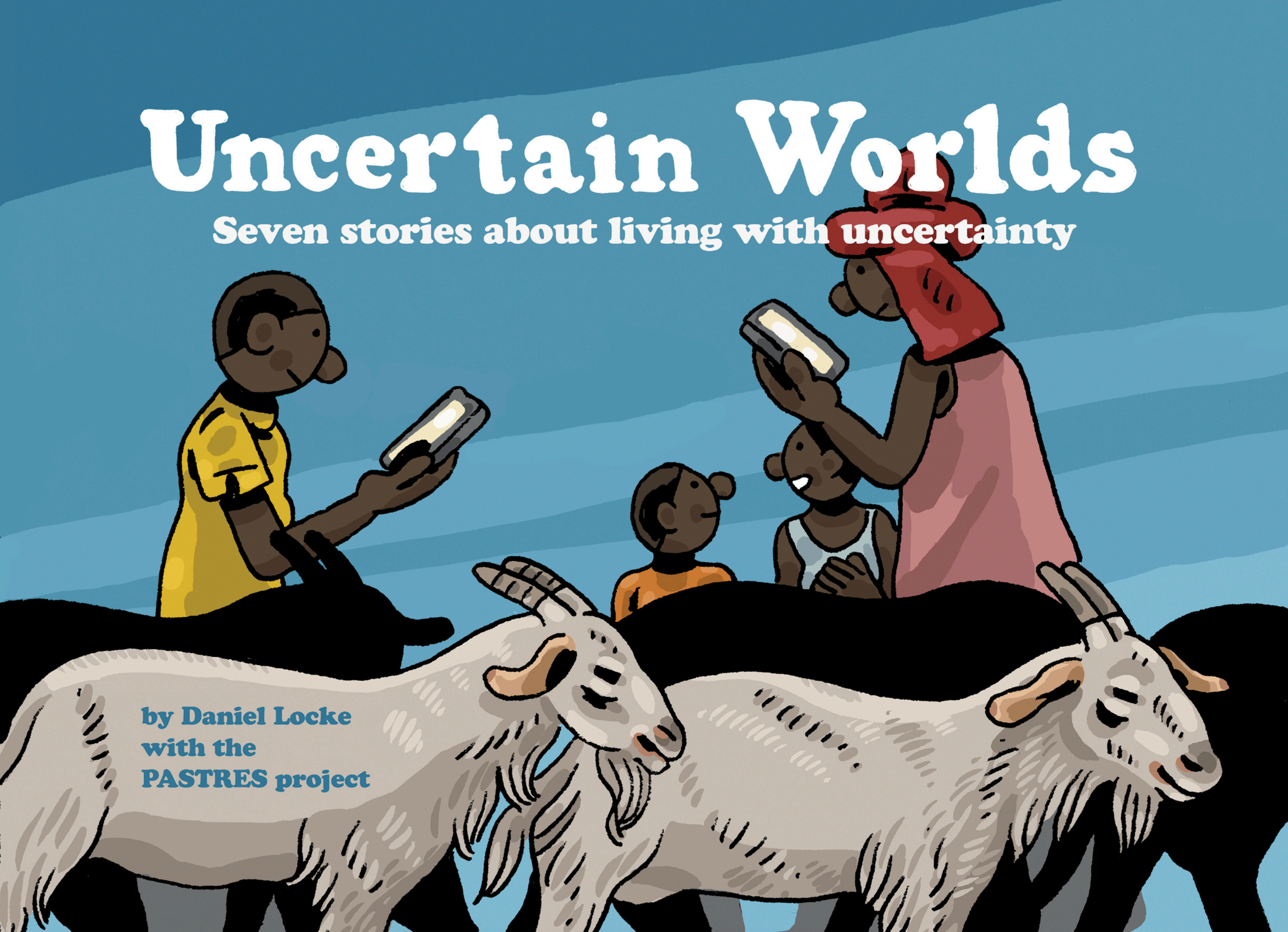
Uncertain Worlds

Seven stories about living with uncertainty



by Daniel Locke
with the
PASTRES project

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ance

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THE FINANCIAL CRASH OF 2007–08 SHOCKED THE WORLD.

LEHMAN

HI! I'M AL GORITHM. I'M YOUR FRIEND.

I LOVE YOU AL.

Reliability
Knowledge
Networks.

Social Assistance & Humanitarian Relief

UNCERTAINIES ARE

ECONOMIC MODELS HAD
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TRA-LA-LA!

BANKERS THOUGHT THEY UNDERSTOOD THE RISKS, BUT THEY WEREN'T READY FOR UNCERTAINTY AND 'UNKNOWN UNKNOWNS'.

ECONOMISTS HAD FORGOTTEN THAT THERE WAS AN IMPORTANT DISTINCTION BETWEEN RISK, WHERE YOU CAN PREDICT AND PLAN, AND UNCERTAINTY...

...WHERE YOU DON'T KNOW WHAT THE FUTURE HOLDS.

AND AIR TRAFFIC CONTROL NEED TO BE HIGHLY RELIABLE.

THESE INFRASTRUCTURES NEED SKILLED PEOPLE TO PLAN AHEAD...

SHARE KNOWLEDGE...

AND IMPROVISE WHEN THINGS GO WRONG.

SO WHY ARE SO MANY HUMANITARIAN, SOCIAL ASSISTANCE AND DISASTER RELIEF OPERATIONS BASED ON RISK ASSESSMENT AND MANAGEMENT...

...WHERE STABILITY AND PREDICTABILITY ARE ASSUMED?

THE STAN
TOP-DOWN
RATHER TH
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FRANK KNIGHT

FRIEDRICH VON HAYEK

JOHN MAYNARD KEYNES

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INTY

THE PRETENCE OF KNOWLEDGE

WE SIMPLY DO NOT KNOW

Risk Uncertainty & Profit

The General Theory of Employment Interest & Money

PASTORALISM IS A 'CRITICAL INFRASTRUCTURE' TOO.

PASTORALISTS ARE EXPERTS AT GETTING RELIABLE PRODUCE OUT OF VARIABLE CONDITIONS.

IN CONFLICT AND DISASTERS SETTINGS, THINGS ARE UNPREDICTABLE...

CRACK

...ALWAYS IN FLUX SOMETIMES SURPRISES HAPPEN.

WHEN THE WORLD IS UNCERTAIN, DIFFERENT APPROACHES ARE NEEDED.

RATHER THAN FIXED PLANS, AID PROGRAMMES NEED TO EXPERIMENT, IMPROVISE, ADAPT AND LEARN.

THE BEST WAY TO
KEEP IN CLOSE TOU
WHAT'S HAPPENING

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MURMER MURMER

NOMISTS NEED
DEAS, MAKING
L AGAIN.

WHO CAN THEY LEARN FROM?

PASTORALISTS ARE USED TO LIVING WITH UNCERTAINTY.

THEY DON'T TRY TO ELIMINATE VARIABILITY — THEY MAKE USE OF IT.

KNOWLEDGE

TO DO THIS, THEY SHARE KNOWLEDGE IN LOCAL NETWORKS.

SCIENTIFIC INFORMATION IS MIXED WITH OTHER LOCAL INSIGHTS... ABOUT GRAZING

...THE CLIMATE, ANIMAL DISEASE OR MARKETS.

SOME PEOPLE ACT AS BROKERS, CONNECTORS AND FACILITATORS ACROSS NETWORKS.

IN CONFLICT-PRONE LOWLAND AREAS IN ETHIOPIA, WORKING WITH PASTORAL COMMUNITY LEADERS IN SAFETY NET SOCIAL ASSISTANCE PROGRAMMES IS IMPORTANT.

THE SKILLS THEY DEVELOP ARE IN EXPERIMENTING, ADAPTING, IMPROVISING AND RESPONDING.

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MUNCH!

HOW CAN BANKING, FINANCE AND ECONOMICS CHANGE?

ACKNOWLEDGE THAT SURPRISES CAN HAPPEN.

THEY ARE 'HIGH RELIABILITY PROFESSIONALS' WHEN DEALING WITH A DISEASE OUTBREAK, THEY HELP TO CONNECT NETWORKS OF LOCAL PASTORALISTS, DEVELOPMENT AGENCIES AND GOVERNMENT OFFICIALS.

TO BE EFFECTIVE, THEY NEED A GOOD REPUTATION, CHARISMA AND PERSONAL CONNECTIONS.

THEY UNDERSTAND THE UNCERTAINTIES BEING FACED, ARE AWARE OF LOCAL NEEDS AND HAVE IDEAS ABOUT HOW ASSISTANCE SHOULD BE FAIRLY DISTRIBUTED.

IN LIBYA, IT'S MOSQUE LEADERS WHO ACT AS BROKERS AND FACILITATORS FOR PROVIDING FUNDING FOR SOCIAL ASSISTANCE THROUGH ZAKAT (ISLAMIC CHARITABLE RELIEF).

VOLUNTARY 'SOCIAL
RESEARCHERS' HELP
TO CHECK OUT
WHO NEEDS WHAT
HELP AT A LOCAL
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ALLOW SPACE FOR DELIBERATION AMONG OPTIONS, WHEN INFORMATION IS INCOMPLETE.

ENCOURAGE MORE HUMAN INTERACTIONS WITHIN FINANCIAL NETWORKS.

AND MAKE UNCERTAINTY CENTRAL TO ECONOMIC ANALYSIS AGAIN.

RATHER THAN EXPECTING THINGS TO WORK THROUGH TOP-DOWN KNOWLEDGE TRANSFER...

...LOCAL KNOWLEDGE NETWORKS ARE VITAL FOR DEVELOPMENT.

THIS MEANS RECOGNISING HOW KNOWLEDGE IS EXCHANGED THROUGH RELATIONSHIPS IN NETWORKS AND THE VITAL ROLES PLAYED BY 'HIGH RELIABILITY PROFESSIONALS'.

SINCE FUTURES ARE UNKNOWN...

...FIXED BUDGETS, STANDARDISED TARGETING AND UNIFORM PROTOCOLS DON'T WORK.

INSTEAD, FLEXIBLE CONTINGENCY PLANNING...

AND
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IMPORTANT

Uncertain Worlds

Seven stories about living with uncertainty

UNCERTAIN WORLDS: Seven Stories About Uncertainty

What are you uncertain about? We're surrounded by things that we can't fully predict or control – the weather and the climate, the economy, jobs, health, growing up or getting old. If you can't control or predict the future, how can you prepare for it? Uncertainty can be scary, but can it also be a source of hope and opportunity?

This booklet explores seven stories about uncertainty in the worlds of economics, banking and finance; migration; pandemic preparedness and response; social protection and humanitarian aid; insurance and knowledge for development. The stories draw on lessons from pastoralists – people who herd animals over large areas in many different places, from high mountains and hills to drylands and deserts. The first story explores how pastoralists are experts at living with uncertainty and making the most of it. Their ways of life can also help us think about how to live in an uncertain world.

The stories are a collaboration between Brighton-based artist Daniel Locke and the authors of the academic research articles on which each story is based. To view the stories online and read the original articles, follow the QR codes in this booklet or visit the PASTRES website:

pastres.org/uncertainworlds

Uncertain Worlds

Lessons From Pastoralists

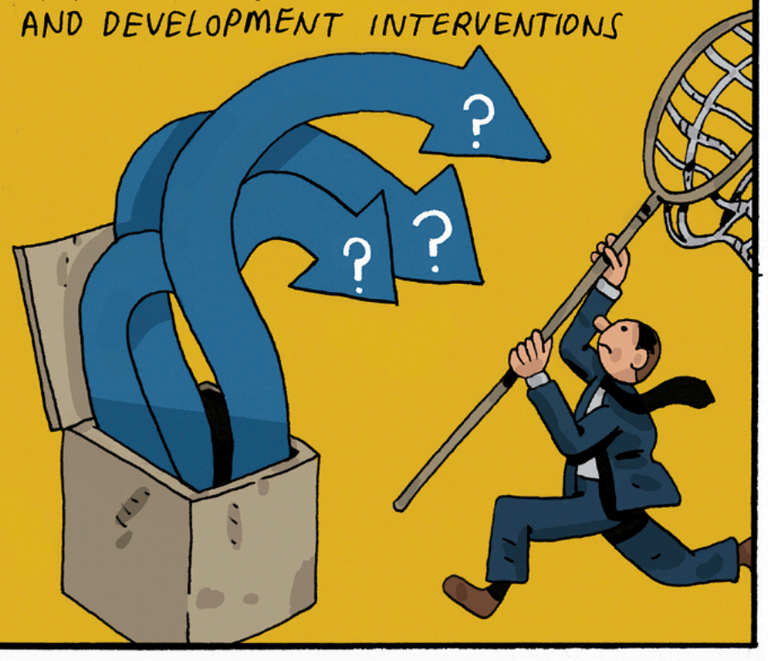


UNCERTAINTY IS ALL AROUND.

HOW DOES PUBLIC POLICY RESPOND?



DOMINANT APPROACHES ARE OFTEN ABOUT EXERTING CONTROL – BY MEANS OF PLANS, REGULATIONS AND DEVELOPMENT INTERVENTIONS



INSTEAD OF ALWAYS TRYING TO CONTROL UNCERTAINTIES, WE COULD TAKE A MORE OPEN, CARING APPROACH.

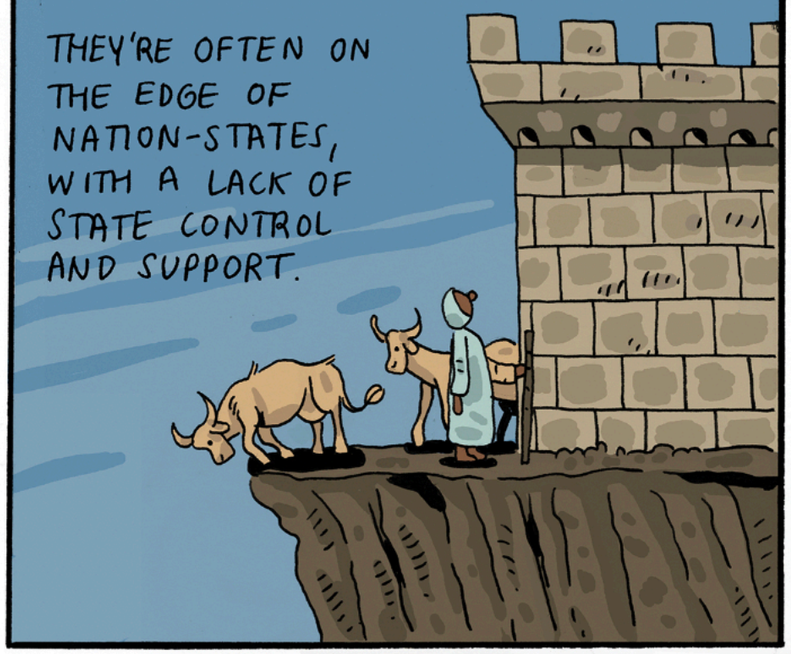


PASTORALISTS ARE USED TO FACING UNCERTAINTIES – AROUND THINGS LIKE DROUGHT, FLOODS, PRICES, DISEASE OR CONFLICT.



PASTORAL AREAS ARE OFTEN MARKED BY MARGINALISATION–

THEY'RE OFTEN ON THE EDGE OF NATION-STATES, WITH A LACK OF STATE CONTROL AND SUPPORT.



HOW DO PASTORALISTS RESPOND TO UNCERTAINTIES?

PASTORALISTS USE FOUR STRATEGIES TO MAKE THE MOST OF VARIABLE LANDSCAPES AND RESPOND TO CHANGES THEY CAN'T DIRECTLY CONTROL.



1. MOBILITY AND MOVEMENTS.
PASTORALISTS MOVE ANIMALS ACROSS A RANGE OF DIFFERENT ENVIRONMENTS MAKING USE OF THEM AT DIFFERENT TIMES TO ASSURE PRODUCTION.

THIS RANGES FROM DAY-TO-DAY MOVEMENTS TO SEASONAL PATTERNS.

2. HERDING, BREEDING AND TRAINING

SUSTAINING A HERD REQUIRES A DIVERSITY OF ANIMALS. HERDERS NEED TO TAKE CARE OF THEIR ANIMALS' HEALTH, AND THEY MUST GET TO KNOW THEIR ANIMALS. THEY ALSO HAVE TO UNDERSTAND THE RELATIONSHIPS BETWEEN ANIMALS IN THEIR HERD.

3. USING 'MOSAICS' & 'PATCH WORKS' OF LAND.

SOME PASTORALISTS WORK IN LARGE, OPEN RANGELANDS, AND DISTRIBUTE ANIMALS WIDELY TO ASSURE PRODUCTION.

OTHERS MAKE USE OF MULTIPLE GRAZING SITES IN A 'MOSAIC' OVER TIME...

...WHICH PUTS LESS PRESSURE ON THE LAND.

4. NETWORKS, SOCIAL RELATIONSHIPS AND MORAL ECONOMIES.

CONNECTIONS, NETWORKING, COLLABORATION & MUTUAL SUPPORT ARE ALL FEATURES OF PASTORAL SYSTEMS.

IN A DISASTER, LIKE MASSIVE LOCUST SWARMS, WORKING TOGETHER IS CRUCIAL TO SPOT SWARMS AND SCARE THEM OFF.

RULES, RELATIONSHIPS & COMMUNICATION BETWEEN PASTORALISTS ARE IMPORTANT SINCE SPACES AND RESOURCES ARE OFTEN SHARED & USED COLLECTIVELY.

NEWER TECHNOLOGIES...

FROM MOBILE PHONES...

...TO MOTORBIKES, CAN HELP KEEP PEOPLE IN TOUCH.

DEVELOPMENT POLICIES HAVE OFTEN LET PASTORALISTS DOWN BY SEEKING TO 'SETTLE' OR 'CIVILISE' THEM. BUT INSTEAD, THEY SHOULD RESPOND TO THE WAYS THEY ACTUALLY MOVE, CARE FOR ANIMALS, MANAGE LAND AND OPERATE THROUGH NETWORKS AND SOCIAL RELATIONS.

UNCERTAINTY IS A BIG DEAL FOR PASTORALISTS, BUT NOT JUST FOR THEM. IT'S A FEATURE OF MANY LIVELIHOODS AND SITUATIONS WORLDWIDE.

MOVING TOWARDS MORE 'CARE-BASED' APPROACHES MIGHT HELP US RESPOND TO UNCERTAINTY. - RETHINKING HOW POLICIES ARE DEVELOPED AND CARRIED OUT.

YOU CAN READ THE ACADEMIC PAPER THIS COMIC IS BASED ON HERE:

Uncertain Worlds

Economics, Banking & Finance

LEHMAN BROS

THE FINANCIAL CRASH OF 2007-08 SHOCKED THE WORLD.

PRESS

LEHMAN

BANKERS HAD BECOME TOO RELIANT ON COMPLEX ALGORITHMS AND MODELS

HI! I'M AL GORITHM. I'M YOUR FRIEND.

I LOVE YOU AL.

SOME ECONOMIC MODELS HAD ASSUMED SUCH A CRISIS WAS IMPOSSIBLE. TRADES WERE BEING MADE IN NANOSECONDS, AND VOLATILITY SPREAD VERY FAST.

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YET IN THE PAST, UNCERTAINTY WAS AT THE CORE OF ECONOMIC THINKING.

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RISK IS DIFFERENT TO UNCERTAINTY

Risk Uncertainty & Profit

FRIEDRICH VON HAYEK

THE PRETENCE OF KNOWLEDGE

JOHN MAYNARD KEYNES

WE SIMPLY DO NOT KNOW

The General Theory of Employment Interest & Money

AFTER THE CRASH ECONOMISTS NEED TO RECLAIM OLDER IDEAS, MAKING UNCERTAINTY CENTRAL AGAIN.

WHO CAN THEY LEARN FROM?

PASTORALISTS ARE USED TO LIVING WITH UNCERTAINTY.

THEY DON'T TRY TO ELIMINATE VARIABILITY –

THEY MAKE USE OF IT.

KNOWLEDGE

THIS REQUIRES EXPERIMENTATION, IMPROVISATION, LEARNING-BY-DOING AND PRACTICAL PROBLEM SOLVING.

MUNCH!

HOW CAN BANKING, FINANCE AND ECONOMICS CHANGE?

ACKNOWLEDGE THAT SURPRISES CAN HAPPEN.

TREAT OPAQUE AND COMPLEX RISK-BASED MODELS AND ALGORITHMS WITH CAUTION.

(1+2)=n
x+2(n)

ALLOW SPACE FOR DELIBERATION AMONG OPTIONS, WHEN INFORMATION IS INCOMPLETE.

ENCOURAGE MORE HUMAN INTERACTIONS WITHIN FINANCIAL NETWORKS.

AND MAKE UNCERTAINTY CENTRAL TO ECONOMIC ANALYSIS AGAIN.

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Uncertain Worlds



Migration.





PEOPLE MIGRATE FOR LOTS OF REASONS, AND SIMPLE 'PUSH' AND 'PULL' FACTORS OFTEN DONT APPLY.

FOCUSING ON MIGRATION AS A 'CRISIS' IGNORES ALL THE UNPREDICTABLE, EVERYDAY MOVEMENTS THAT PEOPLE MAKE.

PASTORALISTS ALSO USE MIGRATION AS A WAY TO CREATE RELIABILITY OUT OF UNCERTAINITY.

THEIR RHYTHMS AND ROUTINES CAN INVOLVE MULTIPLE STOPS AND PAUSES ...

IN

...LOOPS AND FLOWS

OUT

GOOD NETWORKS AND COMMUNICATIONS ARE CRUCIAL.

FOR PASTORALISTS, MOBILITY ISN'T JUST ABOUT RESPONDING TO A CRISIS EITHER.

MANY FACTORS CAN MAKE A DIFFERENCE.

THEY MIGHT SEE AN OPPORTUNITY FOR BETTER GRAZING, OR HAVE A SEASONAL ROUTINE OF MOVEMENTS THAT CAN BE ADAPTED.

MIGRATION POLICIES MUST ACKNOWLEDGE THE REAL EXPERIENCES OF PEOPLE ON THE MOVE: VARIABLE AND COMPLEX, WITH MANY REASONS FOR MOVEMENT.

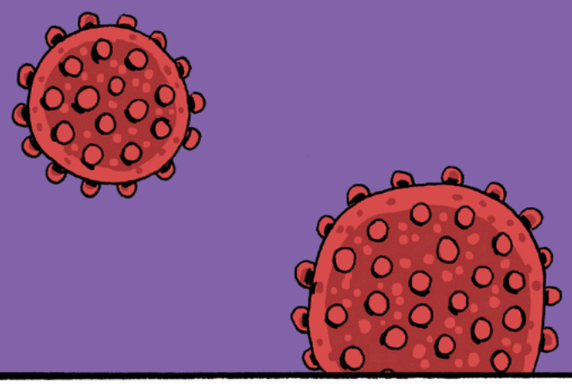
LIVING IN TODAY'S UNCERTAIN WORLD REQUIRES MOVEMENT.

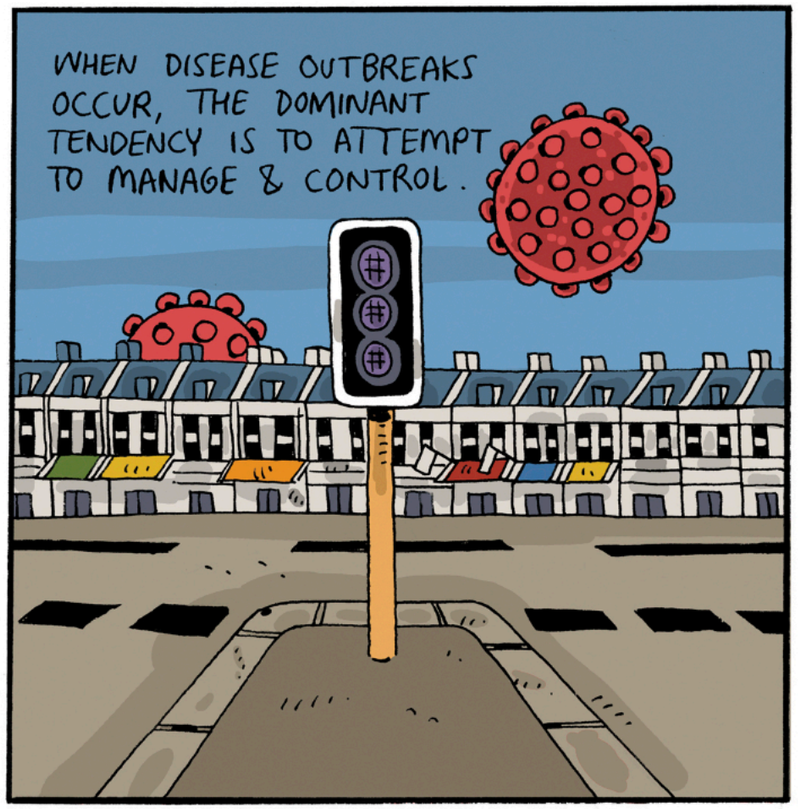
LEARNING FROM THOSE WHO MOVE, LIKE PASTORALISTS, IS ESSENTIAL.

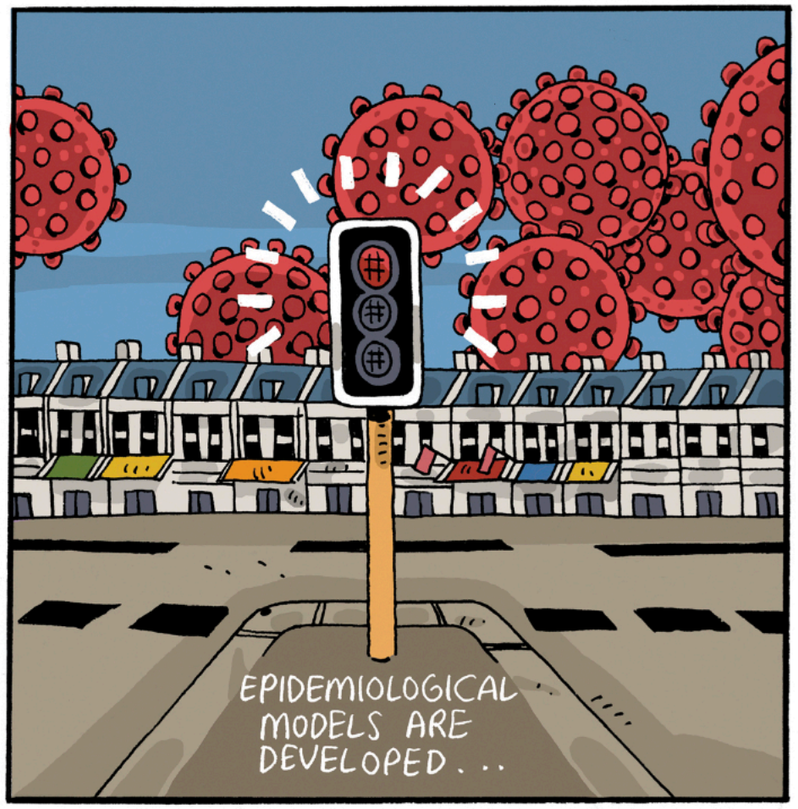
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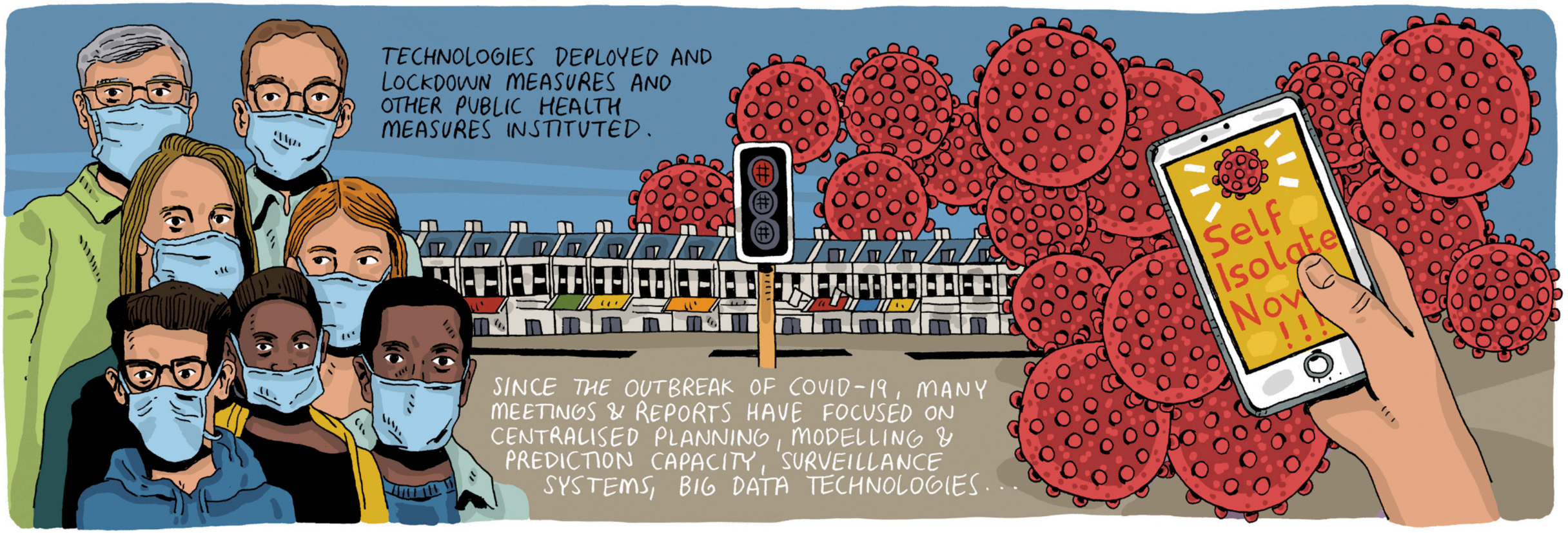
Uncertain Worlds

Pandemics









...RAPID RESPONSE TEAMS, DRUG & VACCINE RESEARCH & DEVELOPMENT, STOCKPILING & PURCHASE ARRANGEMENTS & HEALTH SYSTEM STRENGTHENING.

BUT IN MANY COUNTRIES, ARGUMENTS ABOUT POLITICS & STRATEGIC RESPONSES TO COVID-19 CONTINUE TO RAGE.

PUBLIC HEALTH SPENDING

LOCK DOWNS

TO RESPOND MORE EFFECTIVELY, OTHER APPROACHES ARE ALSO NEEDED. THESE ARE SOMETIMES MISSING OR NEGLECTED IN PLANNING FOR OUTBREAKS.

FIRST AID

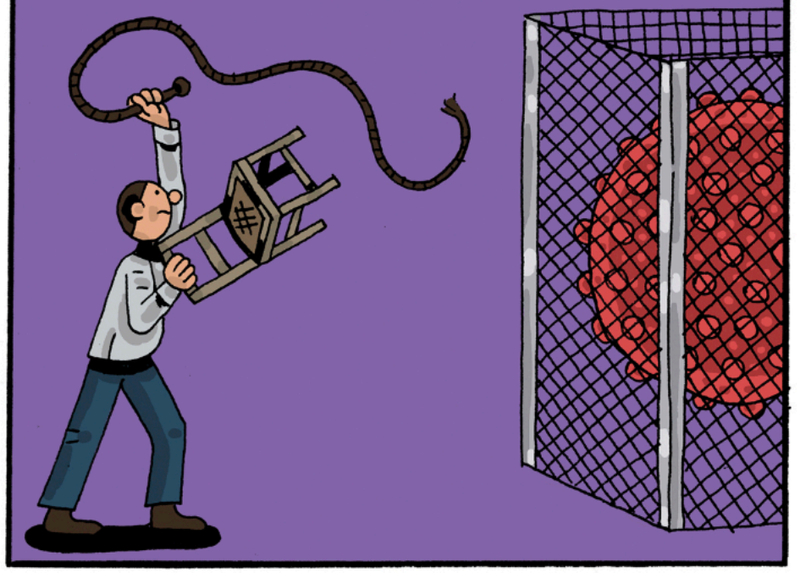
THE APPRECIATION OF MULTIPLE KNOWLEDGES, INCLUDING LOCAL, GROUNDED KNOWLEDGE OF DISEASE IN CONTEXTS.

YES, MYTHS WILL CIRCULATE, BUT ALSO PEOPLE SHARE & BUILD UP KNOWLEDGE THAT'S SPECIFIC TO THEIR CIRCUMSTANCES, MAKING USE OF 'RELIABILITY PROFESSIONALS' ON THE FRONTLINE OF REAL-TIME DISEASE RESPONSES.

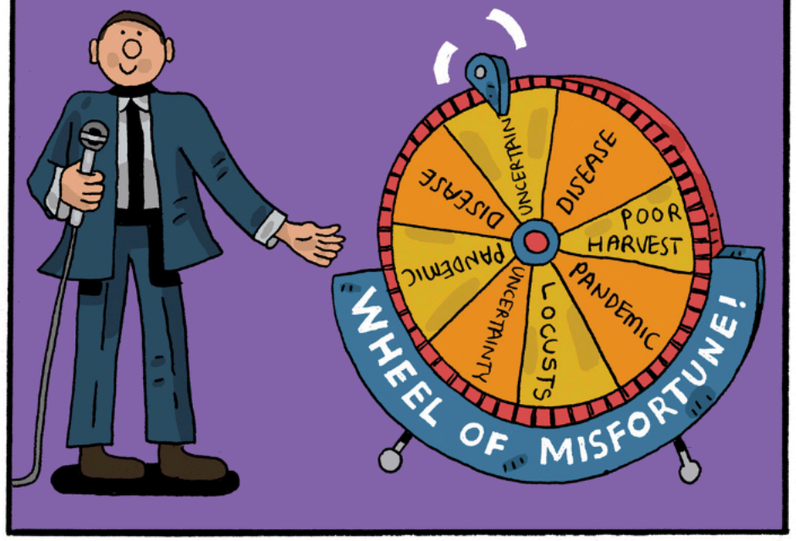
LEARNING FROM THOSE WHO KNOW MOST ABOUT PEOPLE-DISEASE INTERACTIONS...

SEEING OUTBREAKS AS ONGOING, UNFOLDING IN TIME...

...RATHER THAN AS SPECIFIED EVENTS THAT CAN BE CONTROLLED.

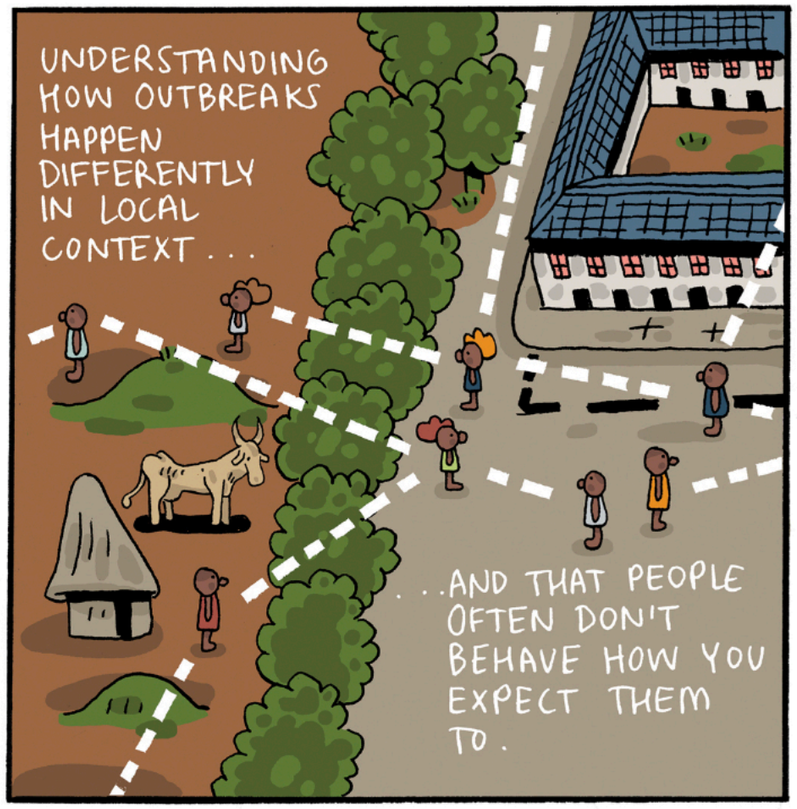


EMBRACING UNCERTAINTIES— REALISING THAT PROBABILITIES CAN'T ALWAYS BE CALCULATED.



UNDERSTANDING HOW OUTBREAKS HAPPEN DIFFERENTLY IN LOCAL CONTEXT...

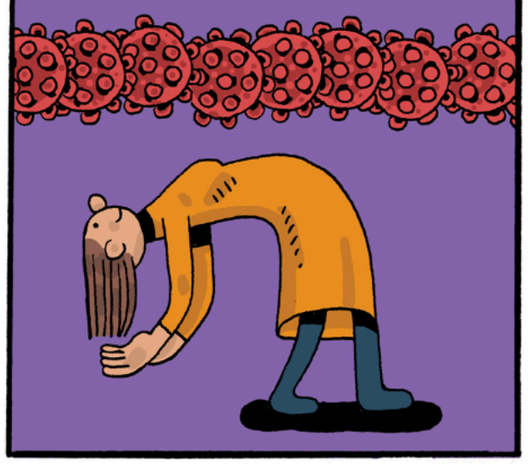
...AND THAT PEOPLE OFTEN DON'T BEHAVE HOW YOU EXPECT THEM TO.



UNDERSTANDING HOW DISEASES INTERACT WITH OTHER VULNERABILITIES, HOW DIFFERENT PEOPLE & CULTURES RESPOND TO DISEASE, & HOW TRUST AFFECTS INTERACTIONS WITH HEALTHCARE WORKERS & GOVERNMENTS.



ADAPTING FLEXIBLY OVER SPACE & TIME.



THE LONG-TERM IMPACTS OF DISEASES LIKE COVID-19 ON SOCIETIES & PEOPLE'S BODIES ARE NOT FULLY KNOWN.



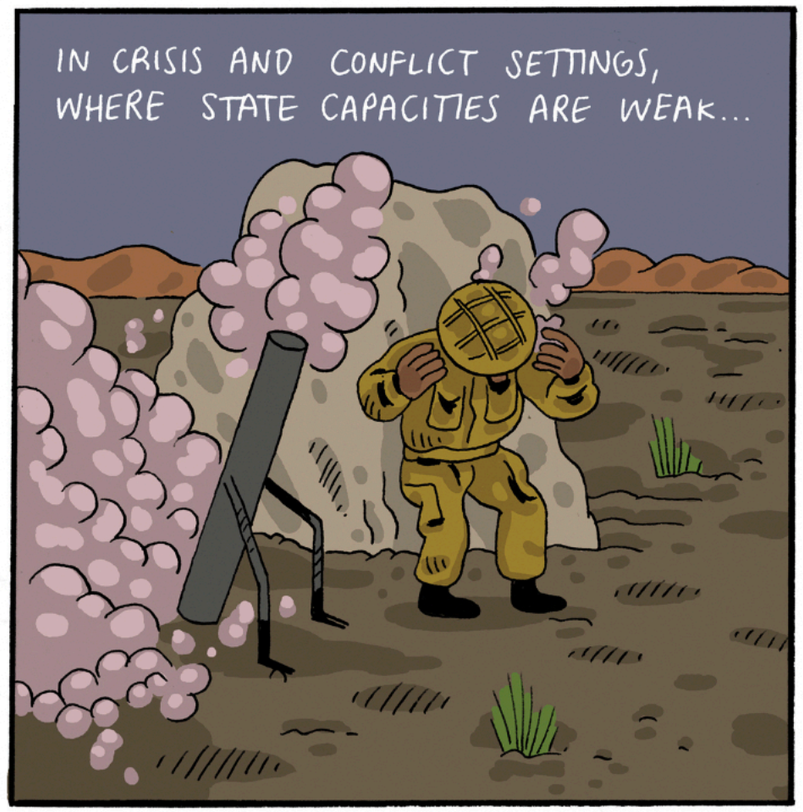
WE SHOULDN'T LOOK BACK ON THE PANDEMIC AS A PAST EVENT, BUT LEARN & RESPOND OVER TIME.

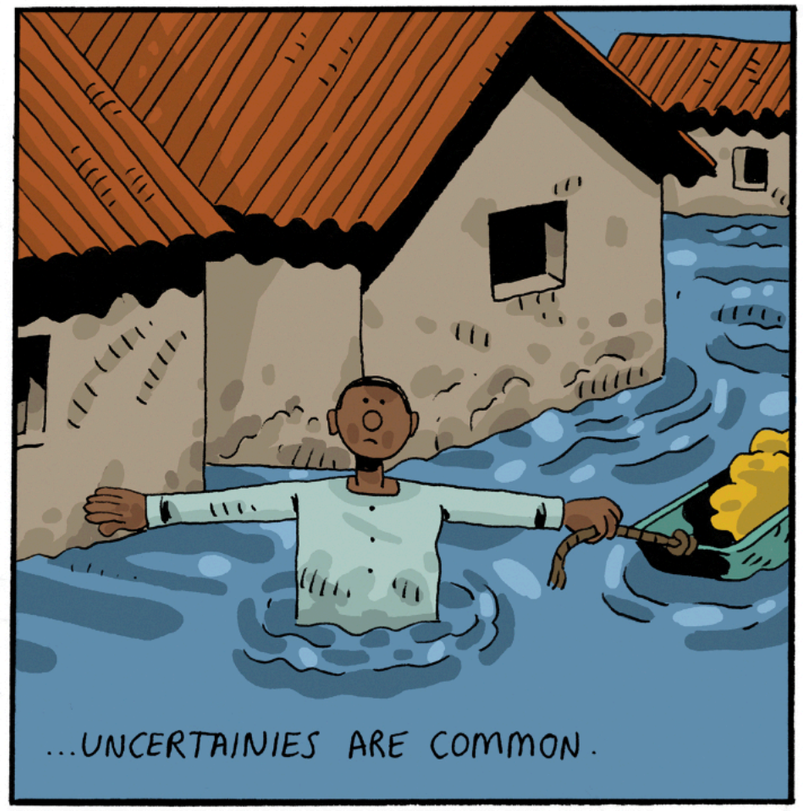
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Uncertain Worlds

Social Assistance & Humanitarian Relief







SO WHY ARE SO MANY HUMANITARIAN, SOCIAL ASSISTANCE AND DISASTER RELIEF OPERATIONS BASED ON RISK ASSESSMENT AND MANAGEMENT...

...WHERE STABILITY AND PREDICTABILITY ARE ASSUMED?

THE STANDARD FOCUS IS ON TOP-DOWN PLANS AND TARGETING, RATHER THAN FLEXIBLE LEARNING AND COLLABORATION.

IN CONFLICT AND DISASTER SETTINGS, THINGS ARE UNPREDICTABLE...

CRACK

...AND ALWAYS IN FLUX. SOMETIMES SURPRISES HAPPEN.

WHEN THE WORLD IS UNCERTAIN, DIFFERENT APPROACHES ARE NEEDED.

RATHER THAN FIXED PLANS, AID PROGRAMMES NEED TO EXPERIMENT, IMPROVISE, ADAPT AND LEARN.

THE BEST WAY TO DO THIS IS TO KEEP IN CLOSE TOUCH WITH WHAT'S HAPPENING ON THE GROUND.

OHH

MURMUR MURMUR

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THE SKILLS THEY DEVELOP ARE IN EXPERIMENTING, ADAPTING, IMPROVISING AND RESPONDING.

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IN LIBYA, IT'S MOSQUE LEADERS WHO ACT AS BROKERS AND FACILITATORS FOR PROVIDING FUNDING FOR SOCIAL ASSISTANCE THROUGH ZAKAT (ISLAMIC CHARITABLE RELIEF).

VOLUNTARY 'SOCIAL RESEARCHERS' HELP TO CHECK OUT WHO NEEDS WHAT HELP AT A LOCAL LEVEL.

SINCE FUTURES ARE UNKNOWN...

...FIXED BUDGETS, STANDARDISED TARGETING AND UNIFORM PROTOCOLS DON'T WORK.

INSTEAD, FLEXIBLE CONTINGENCY PLANNING...

...ANTICIPATORY FINANCING IS IMPORTANT...

...AND WORKING TOGETHER WITH LOCAL PEOPLE IS ESSENTIAL IN CRISIS AND CONFLICT SETTINGS.

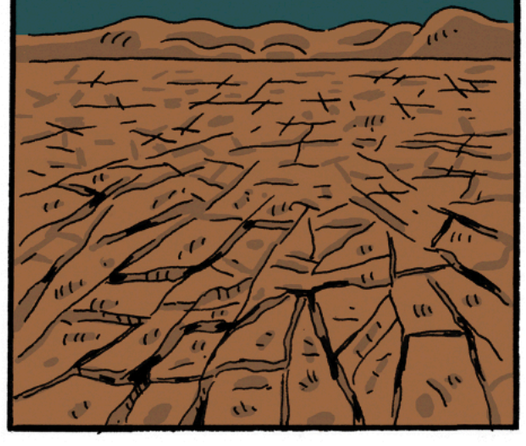
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Uncertain Worlds

Insurance & Moral Economy

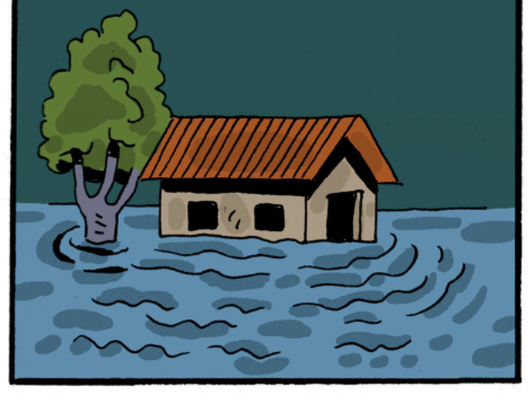


IN THE DRYLANDS OF SOUTHERN ETHIOPIA AND NORTHERN KENYA PASTORALISTS ARE BEING OFFERED INSURANCE AGAINST DROUGHT.



BUT THEY ALSO FACE FLOODS, LOCUSTS OUTBREAKS, DISEASE & CONFLICT.

WHEN PASTORALISTS USE INSURANCE NEW DYNAMICS ARE CREATED...



...A CONTRACTUAL RELATIONSHIP BETWEEN INSURER & PASTORALIST AND AN ALTERED PERCEPTION OF HAZARDS & RISK.



BUT EMBEDDED IN THE NEAT DESIGNS AND TECHNOCRATIC PRACTICES OF COMMERCIAL INSURERS ARE MANY ASSUMPTIONS THAT GENERATE HUGE UNCERTAINTIES AND DISPUTES.

KENYA

IN 'INDEX-BASED PARAMETRIC INSURANCE', YOU GET A PAYOUT WHEN AN 'INDEX RELATED TO EXPECTED LOSSES FALLS BELOW AN AGREED THRESHOLD.

INSURERS MONITOR SATELLITE IMAGES OF...

...VEGETATION IN GRASSLANDS.

FOR EXAMPLE, WHEN THE SATELLITE IMAGE SHOWS FORAGE LEVELS FALLING BEYOND A CERTAIN LEVEL, WHICH WOULD RESULT IN LIVESTOCK DEATHS, THEN PASTORALISTS GET A PAYOUT.

SO, WHAT'S THE PROBLEM?

PASTORALISTS MOVE AROUND, SO ASSESSMENTS BASED ON PARTICULAR PLACES NEED TO TAKE ACCOUNT OF THIS.

BECAUSE PAYOUTS ARE BASED ON SATELLITE MONITORING, SOMETIMES NOT ALL LOSSES ARE INCLUDED.

COMMERCIAL INSURANCE CAN LEAD TO PASTORALISTS ABANDONING COLLECTIVE WAYS OF MANAGING UNCERTAINTIES, AND CHOOSING A MORE INDIVIDUALISTIC APPROACH.

IN ETHIOPIA, PEOPLE WHO TAKE UP INSURANCE TEND TO BE THOSE WITH LARGER HERDS (USUALLY OLDER MEN) AND THOSE WHO HAVE DIVERSIFIED LIVLIHOODS.

INSTEAD OF BUYING INSURANCE, PASTORALISTS MAY SHARE & LOAN LIVESTOCK WITH FAMILY & FRIENDS, SPREADING THE RISK.

BECAUSE DROUGHTS ARE UNCERTAIN PASTORALISTS MUST USE FLEXIBLE STRATEGIES TO RESPOND.

MOBILITY IS IMPORTANT, REQUIRING SKILLED HERDING & KNOWLEDGE OF WHERE...

...GRAZING & WATER CAN BE FOUND.

MOVEMENT INVOLVES WORKING TOGETHER, AS PART OF A 'MORAL ECONOMY'.

STRONG SOCIAL AND POLITICAL RELATIONS ARE FORGED ACROSS LARGE AREAS, REINFORCED BY POLITICAL CONNECTIONS AND A SENSE OF WIDER POLITICAL & ETHNIC SOLIDARITY.

CHALLENGES ARE NOT DEFINED IN TERMS OF SINGULAR 'EVENTS' THAT CAN BE 'MANAGED' AS RISKS, BUT AS THE OVER LAPPING, CUMULATIVE, EVERYDAY EXPERIENCES OF UNCERTAINTY, COMING FROM MULTIPLE SOURCES.



INSURANCE IS ALWAYS COMBINED WITH OTHER RESPONSES TO UNCERTAINTY.

FOR MANY, INSURANCE IS TOO EXPENSIVE AND NOT APPROPRIATE.

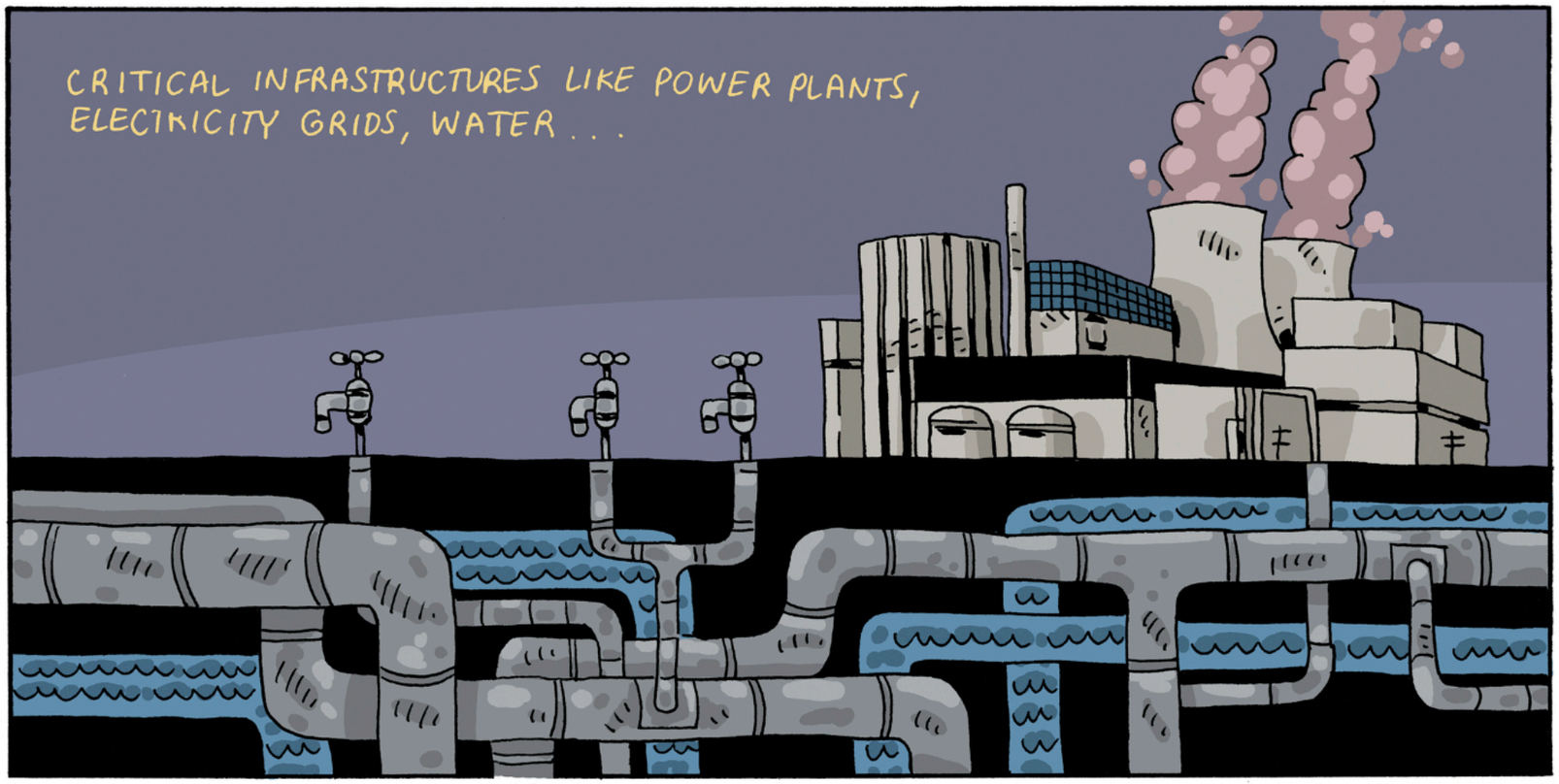
THINKING ABOUT HOW INDIVIDUALISED COMMERCIAL INSURANCE COMPLEMENTS OTHER FORMS OF COLLECTIVE SOLIDARITY AND SUPPORT WITHIN COMMUNITIES IS ESSENTIAL.

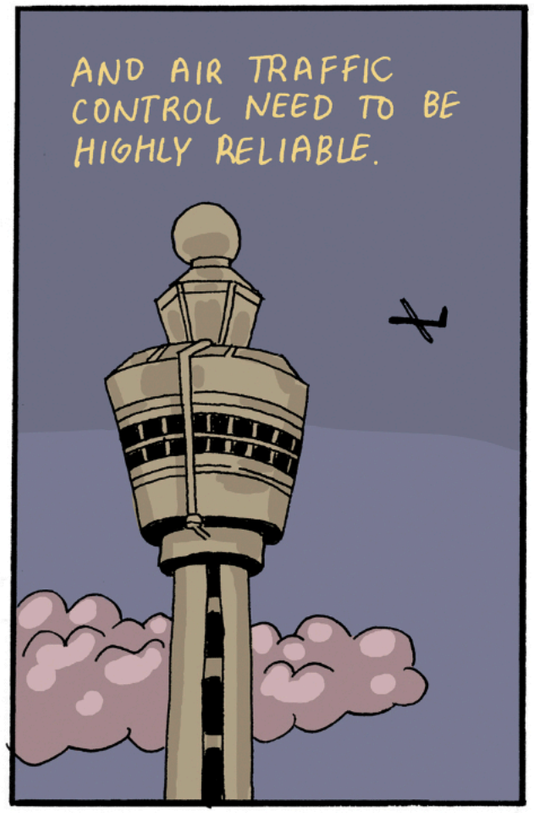
YOU CAN READ THE ACADEMIC PAPER THIS IS BASED ON HERE:

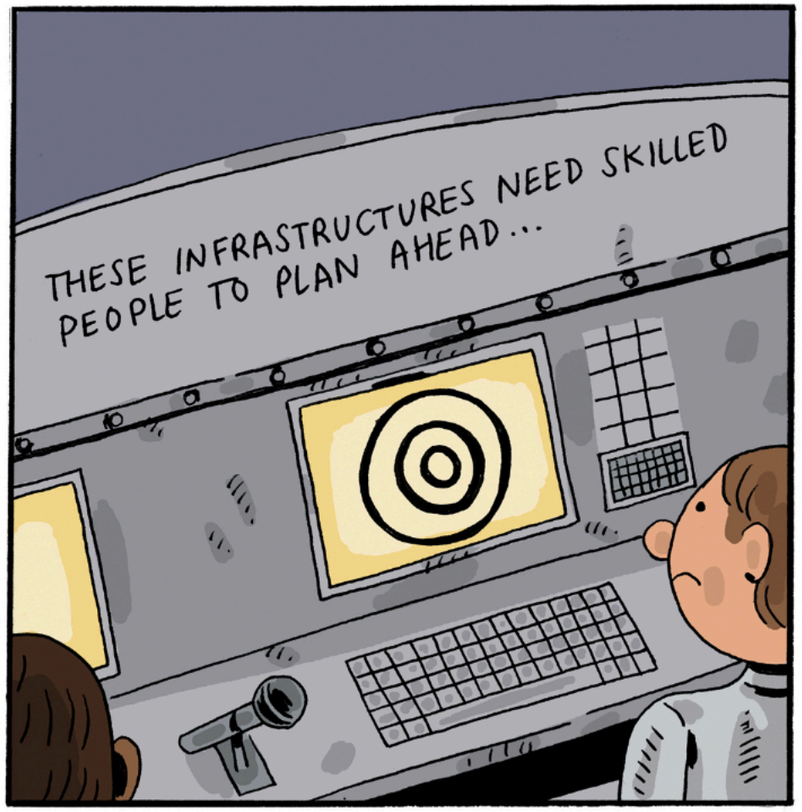
Uncertain Worlds

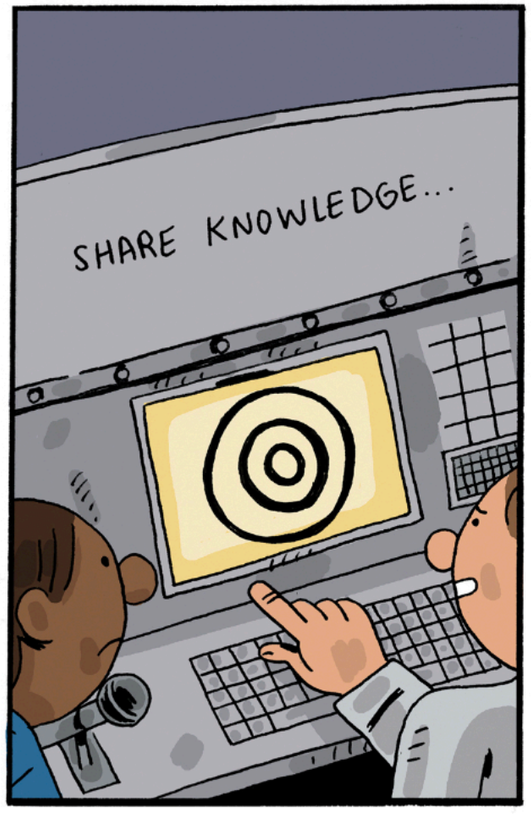
High Reliability Knowledge Networks.

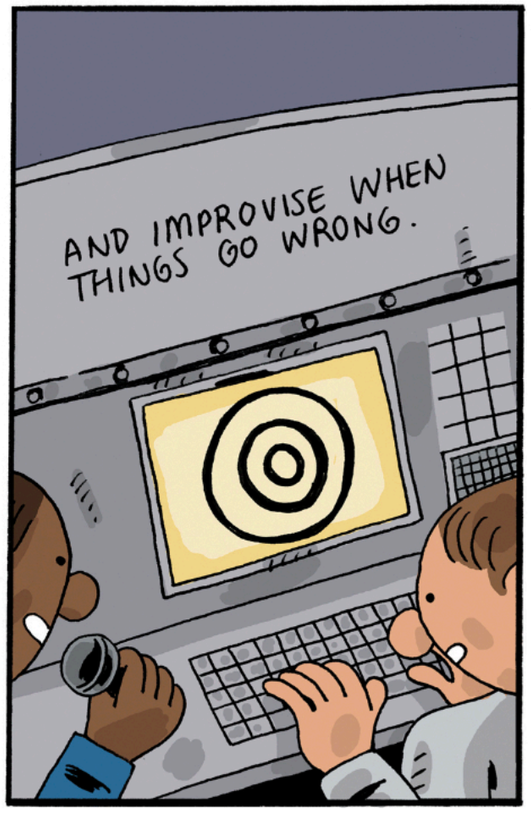












PASTORALISM IS A 'CRITICAL INFRASTRUCTURE' TOO.

PASTORALISTS ARE EXPERTS AT GETTING RELIABLE PRODUCE OUT OF VARIABLE CONDITIONS.

TO DO THIS, THEY SHARE KNOWLEDGE IN LOCAL NETWORKS.

SCIENTIFIC INFORMATION IS MIXED WITH OTHER LOCAL INSIGHTS... ABOUT GRAZING

...THE CLIMATE, ANIMAL DISEASE OR MARKETS.

SOME PEOPLE ACT AS BROKERS, CONNECTORS AND FACILITATORS ACROSS NETWORKS.

THEY ARE 'HIGH RELIABILITY PROFESSIONALS'. WHEN DEALING WITH A DISEASE OUTBREAK, THEY HELP TO CONNECT NETWORKS OF LOCAL PASTORALISTS, DEVELOPMENT AGENCIES AND GOVERNMENT OFFICIALS.

TO BE EFFECTIVE, THEY NEED A GOOD REPUTATION, CHARISMA AND PERSONAL CONNECTIONS.

RATHER THAN EXPECTING THINGS TO WORK THROUGH TOP-DOWN KNOWLEDGE TRANSFER...

...LOCAL KNOWLEDGE NETWORKS ARE VITAL FOR DEVELOPMENT.

THIS MEANS RECOGNISING HOW KNOWLEDGE IS EXCHANGED THROUGH RELATIONSHIPS IN NETWORKS AND THE VITAL ROLES PLAYED BY 'HIGH RELIABILITY PROFESSIONALS'.

YOU CAN READ THE ACADEMIC PAPER THIS COMIC IS BASED ON HERE:

About PASTRES

The booklet is supported by a European Research Council Advanced Grant to the PASTRES (Pastoralism, Uncertainty, Resilience: Global Lessons from the Margins) research programme, which is co-hosted by the Institute of Development Studies at the University of Sussex and the European University Institute in Florence. The project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (Grant agreement No. 740342).

pastres.org

About Daniel Locke

The artwork and stories in this booklet were developed by Daniel Locke with the PASTRES team. Daniel Locke is an artist and graphic novelist based in Brighton, UK. Since 2013, much of his work has been informed and shaped by the discoveries of contemporary science. His work ranges between commissions for commercial bodies and socially engaged organisations, such as universities and charities, alongside personal work and residencies.

daniellocke.com

mics,
ing
ance

ROs

THE FINANCIAL CRASH OF 2007-08 SHOCKED THE WORLD.

LEHMAN

HI! I'M AL GORITHM. I'M YOUR FRIEND.

I LOVE YOU AL.

Reliability
Knowledge
Networks.

Social Assistance & Humanitarian Relief

...UNCERTAINTIES ARE

ECONOMIC MODELS HAD
ED SUCH A CRISIS WAS
IBLE. TRADES WERE BEING
IN NANOSECONDS, AND
LITY SPREAD VERY FAST.

TRA-LA-LA!

BANKERS THOUGHT THEY UNDERSTOOD THE RISKS, BUT THEY WEREN'T READY FOR UNCERTAINTY AND 'UNKNOWN UNKNOWNS'.

ECONOMISTS HAD FORGOTTEN THAT THERE WAS AN IMPORTANT DISTINCTION BETWEEN RISK, WHERE YOU CAN PREDICT AND PLAN, AND UNCERTAINTY...

...WHERE YOU DON'T KNOW WHAT THE FUTURE HOLDS.

AND AIR TRAFFIC CONTROL NEED TO BE HIGHLY RELIABLE.

THESE INFRASTRUCTURES NEED SKILLED PEOPLE TO PLAN AHEAD...

SHARE KNOWLEDGE...

AND IMPROVISE WHEN THINGS GO WRONG.

SO WHY ARE SO MANY HUMANITARIAN, SOCIAL ASSISTANCE AND DISASTER RELIEF OPERATIONS BASED ON RISK ASSESSMENT AND MANAGEMENT...

...WHERE STABILITY AND PREDICTABILITY ARE ASSUMED?

THE STAN
TOP-DOWN
RATHER
AND COLLA
VOLATILE

AST, UNCERTAINTY WAS AT THE CORE OF ECONOMIC THINKING.

ERENT
INTY

FRANK KNIGHT

FRIEDRICH VON HAYEK

JOHN MAYNARD KEYNES

THE PRETENCE OF KNOWLEDGE

WE SIMPLY DO NOT KNOW

Risk Uncertainty & Profit

The General Theory of Employment Interest & Money

PASTORALISM IS A 'CRITICAL INFRASTRUCTURE' TOO.

PASTORALISTS ARE EXPERTS AT GETTING RELIABLE PRODUCE OUT OF VARIABLE CONDITIONS.

IN CONFLICT AND DISASTERS SETTINGS, THINGS ARE UNPREDICTABLE...

CRACK

...ALWAYS IN FLUX SOMETIMES SURPRISES HAPPEN.

WHEN THE WORLD IS UNCERTAIN, DIFFERENT APPROACHES ARE NEEDED.

RATHER THAN FIXED PLANS, AID PROGRAMMES NEED TO EXPERIMENT, IMPROVISE, ADAPT AND LEARN.

THE BEST WAY TO
KEEP IN CLOSE TOU
WHAT'S HAPPENING

OHH

MURMER MURMER

NOMISTS NEED
DEAS, MAKING
L AGAIN.

WHO CAN THEY LEARN FROM?

PASTORALISTS ARE USED TO LIVING WITH UNCERTAINTY.

THEY DON'T TRY TO ELIMINATE VARIABILITY — THEY MAKE USE OF IT.

KNOWLEDGE

TO DO THIS, THEY SHARE KNOWLEDGE IN LOCAL NETWORKS.

SCIENTIFIC INFORMATION IS MIXED WITH OTHER LOCAL INSIGHTS... ABOUT GRAZING

...THE CLIMATE, ANIMAL DISEASE OR MARKETS.

SOME PEOPLE ACT AS BROKERS, CONNECTORS AND FACILITATORS ACROSS NETWORKS.

IN CONFLICT - PRONE LOWLAND AREAS IN ETHIOPIA, WORKING WITH PASTORAL COMMUNITY LEADERS IN SAFETY NET SOCIAL ASSISTANCE PROGRAMMES IS IMPORTANT.

(ME)

THE SKILLS THEY DEVELOP ARE IN EXPERIMENTING, ADAPTING, IMPROVISING AND RESPONDING.

CHEW

THE WAY THEY WO
IS OFTEN IN NETW
LEARNING AND
SHARING
INFORMATION

S EXPERIMENTATION,
, LEARNING-BY-DOING
AL PROBLEM SOLVING.

MUNCH!

HOW CAN BANKING, FINANCE AND ECONOMICS CHANGE?

ACKNOWLEDGE THAT SURPRISES CAN HAPPEN.

THEY ARE 'HIGH RELIABILITY PROFESSIONALS' WHEN DEALING WITH A DISEASE OUTBREAK, THEY HELP TO CONNECT NETWORKS OF LOCAL PASTORALISTS, DEVELOPMENT AGENCIES AND GOVERNMENT OFFICIALS.

TO BE EFFECTIVE, THEY NEED A GOOD REPUTATION, CHARISMA AND PERSONAL CONNECTIONS.

THEY UNDERSTAND THE UNCERTAINTIES BEING FACED, ARE AWARE OF LOCAL NEEDS AND HAVE IDEAS ABOUT HOW ASSISTANCE SHOULD BE FAIRLY DISTRIBUTED.

IN LIBYA, IT'S MOSQUE LEADERS WHO ACT AS BROKERS AND FACILITATORS FOR PROVIDING FUNDING FOR SOCIAL ASSISTANCE THROUGH ZAKAT (ISLAMIC CHARITABLE RELIEF).

VOLUNTARY 'SOCIAL
RESEARCHERS' HELP
TO CHECK OUT
WHO NEEDS WHAT
HELP AT A LOCAL
LEVEL.

EAT OPAQUE AND COMPLEX
SK-BASED MODELS AND
GORITHMS WITH CAUTION.

(t+2)=n
x+2(n)

ALLOW SPACE FOR DELIBERATION AMONG OPTIONS, WHEN INFORMATION IS INCOMPLETE.

ENCOURAGE MORE HUMAN INTERACTIONS WITHIN FINANCIAL NETWORKS.

AND MAKE UNCERTAINTY CENTRAL TO ECONOMIC ANALYSIS AGAIN.

RATHER THAN EXPECTING THINGS TO WORK THROUGH TOP-DOWN KNOWLEDGE TRANSFER...

...LOCAL KNOWLEDGE NETWORKS ARE VITAL FOR DEVELOPMENT.

THIS MEANS RECOGNISING HOW KNOWLEDGE IS EXCHANGED THROUGH RELATIONSHIPS IN NETWORKS AND THE VITAL ROLES PLAYED BY 'HIGH RELIABILITY PROFESSIONALS'.

SINCE FUTURES ARE UNKNOWN...

...FIXED BUDGETS, STANDARDISED TARGETING AND UNIFORM PROTOCOLS DON'T WORK.

INSTEAD, FLEXIBLE CONTINGENCY PLANNING...

...AND
ANTICIPATO
FINANCING
IMPORTANT

PASTRES
Pastoralism, Uncertainty, Resilience

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