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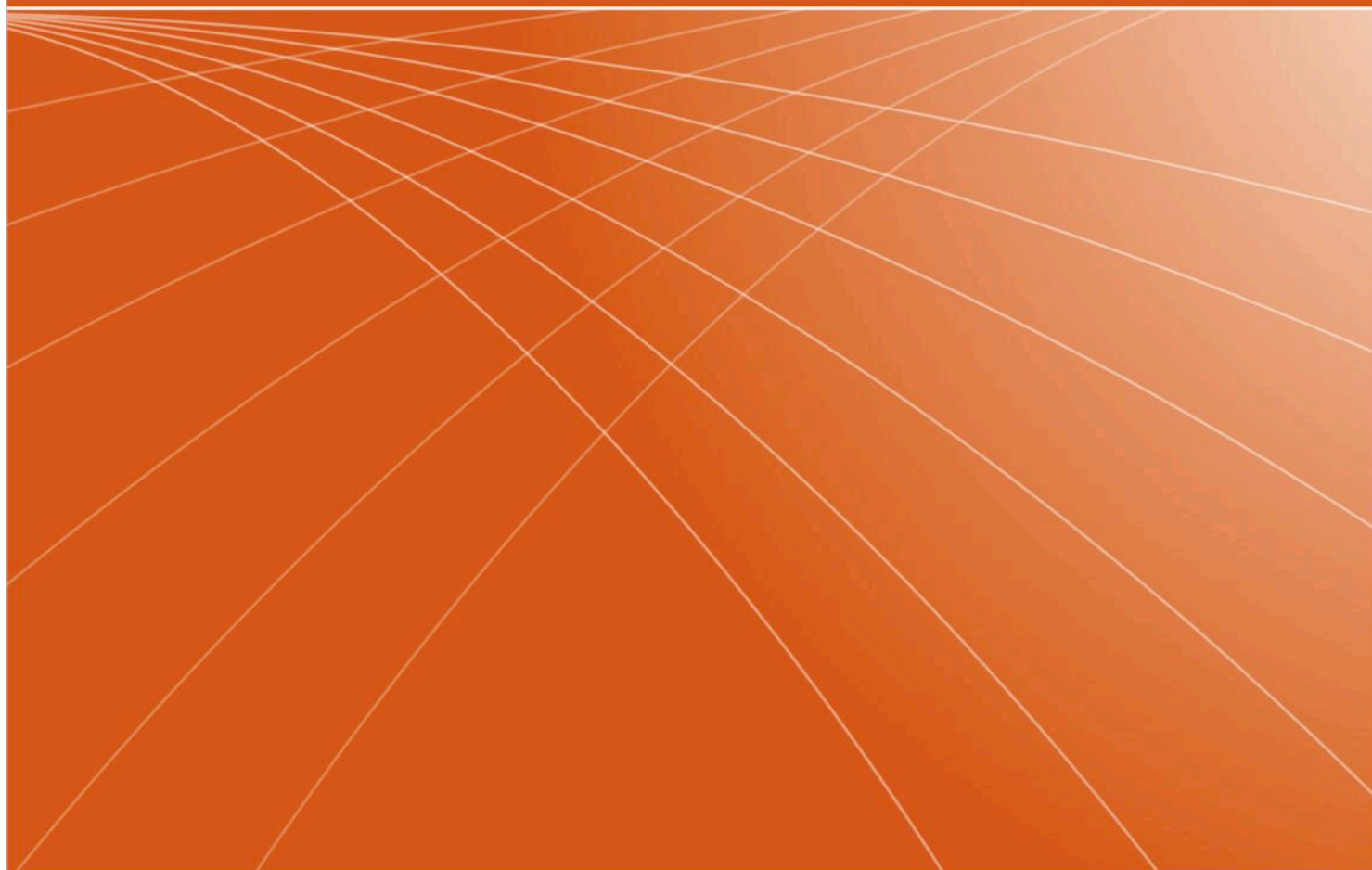
Discussion Paper

Innovations in Monitoring & Evaluation

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KNOWLEDGE, INNOVATION AND CAPACITY



Why Innovation in Monitoring & Evaluation is Necessary¹

Countries are increasingly taking **innovative approaches to monitor and evaluate the performance of public policies, programmes and service delivery**. There are a number of reasons why this is happening.² On the one hand, M&E has to respond to the higher standards expected of it, and to the fast-changing environment. On the other hand, as technology moves forward, opportunities for innovation in M&E are opening up.

A number of **factors** are **driving** innovation in M&E:

- **SINGLE METHOD IS NOT SUFFICIENT ANY MORE**
Public policies, programmes and service delivery operate in increasingly complex and ever-changing social, economic, ecological and political contexts. No single evaluation methodology can adequately describe and analyze the interactions among all of these different factors. Mixed methods allow for *triangulation* – or comparative analysis – which is better suited to capture complex results and to provide different perspectives on the effect of public policies, programmes or service delivery.
- **OUTCOMES COUNT, NOT ACTIVITIES**
An increased emphasis on measuring *outcomes* (=changes in behaviour and performance) as a result of public policy, programmes and service delivery requires a set of M&E tools that is different from that used for measuring the delivery of activities and outputs. Due to their nature, outcomes are typically more difficult to monitor and evaluate, since data is often not readily available and primary data collection is typically required. Further, simple pre-test/post-test comparisons often used in small evaluations tend to ignore contextual factors that may have influenced results, resulting in findings with limited credibility.
- **CIVIL SOCIETY DEMANDS ACCOUNTABILITY**
In countries with an increasingly energetic civil society, there is growing public demand for greater transparency and public accountability. This in turn requires more rigorous monitoring and evaluation of public policies, programmes and service delivery. A lack of objective evidence on the performance of policies, programmes and service delivery may contribute to a lack of accountability and even misappropriation of resources.
- **NEED FOR FLEXIBLE AND FASTER M&E**
Increased unpredictability, rapidly changing circumstances and a dynamic environment for public action require more flexible, dynamic and nimble approaches to M&E that capture and adapt to rapidly and continuously changing circumstances and cultural dynamics. Traditional approaches of diligently checking if a public policy, programme or service is 'on-track' in achieving a pre-defined milestone is often not sufficient anymore. Further, feedback loops of traditional monitoring (with quarterly and annual monitoring, mid-term reviews, final evaluations, annual reporting, etc.) have often proven to be too slow to influence decision-making in time. More timely real-time updates are required for better use of monitoring information and evaluation findings.
- **AVOIDING COGNITIVE BIAS**
More traditional M&E methods like focus groups or surveys require interpretation by experts who may build in their biases or re-interpret rather than aggregate citizens' inputs in order to uncover patterns. With increasing application of behavioural economics to policy making, this potentially detrimental impact of cognitive biases on decision-making is becoming more obvious.

¹ partially based on (1) *Innovations in Monitoring and Evaluation 'as if Politics Mattered'*, Concept Note, Roche/Kelly, 04-08-2011, mande.co.uk/2011/coming-events/conferences/innovations-in-monitoring-and-evaluation-as-if-politics-mattered/, (2) *Answering Calls for Integrative Capacity Development for Sustainable Development, Group 3: Monitoring and Evaluating Sustainable Development Results: Flexible, Nimble and Dynamic Approaches*, 15/17-10-2012, Bratislava, Slovakia, draft; (3) *Using Technology for Development Project Monitoring & Evaluation: An Interview with Linda Raftree*, 02-07-2013, bestict4d.wordpress.com/2013/07/02/using-technology-for-development-project-monitoring-evaluation-an-interview-with-linda-raftree/

² for a detailed critique of current M&E practices from a women's rights perspective see e.g., *Capturing Change in Women's Realities: A Critical Overview of Current Monitoring & Evaluation Frameworks and Approaches*, Batliwala/Pittman, AWID, December 2010, www.awid.org/About-AWID/AWID-News/Capturing-Change-in-Women-s-Realities

THE DEVELOPMENT CONTEXT

In addition, a number of **factors** are currently **enabling** innovation to take place in M&E:

- **MORE MATURE CIVIL SOCIETIES**

In many countries, a more matured civil society is increasingly willing and capable to participate in the planning, monitoring and evaluation of public policies, programmes and service delivery. This is partially also due to new information and communication technology tools (see next paragraph).

- **BOOM OF INFORMATION AND COMMUNICATION TECHNOLOGY**

Advances in and the spread of Information and Communication Technology (ICT) open up a wide range of new opportunities for innovations in M&E. This includes the spread of access to the internet and mobile phone networks, the proliferation of mobile phones and other hand-held devices, better and cheaper satellite and aerial remote sensing, the production of inexpensive sensors (such as pyro-electric heat sensors and pressure slab sensors) as well as sophisticated software for data analysis and mining.

- **RISE OF 'BIG DATA'**

The explosion in the quantity and diversity of high frequency digital data holds the potential—as yet largely untapped—to allow decision makers to track the performance and effects of social policies, programmes and service delivery to better understand where adjustments are required. Big data is an umbrella term for call logs, online user-generated content such as blog posts and Tweets, online searches, satellite images, and mobile-banking transactions. Big data usually requires computational techniques to unveil trends and patterns and turn them into actionable information.

Taxonomy of types of new, digital data sources potentially relevant to M&E systems

- **Data Exhaust** – passively collected transactional data from people's use of digital services such as mobile phones (call detail records, location data, airtime purchase patterns), the making of purchases, the transferring of remittances or mobile money, etc., and/or operational metrics and other real-time data collected by UN agencies, NGOs and other aid organizations to monitor their projects and programmes (e.g., stock levels, school attendance); these digital services create networked sensors of human behaviour.
- **Online Information** – web content such as news media and social media interactions (e.g., blogs, Twitter), web searches, news articles obituaries, e-commerce, job postings; this approach considers web usage and content as a sensor of human intent, sentiments, perceptions, and want.
- **Physical Sensors** – satellite or infrared imagery of changing landscapes, traffic patterns, light emissions, urban development and topographic changes, etc.; this approach focuses on remote sensing of changes in human activity.
- **Citizen Reporting or Crowd-sourced Data** – Information actively produced or submitted by citizens through mobile phone-based surveys, hotlines, user-generated maps, etc; while not passively produced, this is a key information source for verification and feedback.

Source: FAQs, Global Pulse, www.unglobalpulse.org/about/faqs

What Qualifies as Innovation in Monitoring & Evaluation

An innovation is the **introduction of something new, a new idea, method, or device**.³ Typical categories of innovations for monitoring and evaluating the performance of public policies, programmes or service delivery are a) **technological** innovations, b) **innovative products**, c) **innovative services**, d) **innovative processes**, or e) **innovative interactions and partnerships**. In this paper, we consider a product, process, service or a technology to be an innovation in M&E if at least two of the following **criteria** are met:⁴

³ Merriam-Webster dictionary, www.merriam-webster.com/dictionary/innovation

⁴ partially adopted from: (1) *EvalPartners Evaluation Challenge*, mymande.org/evalpartners/innovation_challenge, *Six Fundamental Truths About Innovation*, Stikeleather 2013, blog, Management Innovation eXchange, 28-02- 2013, www.managementexchange.com/blog/six-fundamental-truths-about-innovation; (2) *Principles – Stories of Innovation*, UNICEF, unicefstories.org/principles/, (3) *Innovation for development: what is really different?*, Quaggiotto 2013, Voices from Eurasia blog, UNDP, 18-03-2013, europeandcis.undp.org/blog/2013/03/18/innovation-for-development-what-is-really-different/

THE DEVELOPMENT CONTEXT

- **SIGNIFICANT *IMPACT***

Innovations in M&E are technologies, products, services, processes, or interactions that have shown a significant impact on how M&E is done (not just innovation for innovation's sake) or have a clear potential to change M&E in order to improve the credibility, independence or use of monitoring information and evaluation findings. Typically, innovations with a great potential impact also address a core *need* or core *challenge* in M&E.

- **CATALYTIC CHANGE**

Innovations in M&E have to go *beyond incremental* change and reframe, re-imagine, or recombine different existing elements to yield a *new pathway* for M&E. In other words: An innovation in M&E is not simply a better, faster, cheaper way of doing the same thing. It requires going beyond current models of thinking in M&E. That is why it often takes outsiders or unconventional partnerships to break old paradigms in M&E.

- **CONCRETE**

Innovations in M&E must be sufficiently concrete. Ideas and theoretical approaches are not innovations (although they can lead to innovations). Innovations are concrete if they are already being implemented (at least as pilots), can be replicated and are potentially scalable across different contexts and regions.

Purpose of Innovation in Monitoring & Evaluation

Innovations in monitoring and evaluation should contribute – at least indirectly – to increased independence, credibility and utility of monitoring information and evaluation findings:⁵

- **INDEPENDENCE**

Independence of monitoring and evaluations implies freedom from undue political influence and/or organizational pressure. This requires that the evaluators have full authority to submit reports directly to appropriate levels of decision-making and that management must not impose restriction on the scope, content, comments and recommendations of evaluation reports. A high degree of independence supports the objectivity – and in turn the credibility and use – of evaluations.

- **CREDIBILITY**

The credibility of an evaluation depends on the expertise and independence of evaluators, the degree of transparency of the evaluation process, the quality of evaluation outputs, the balance between reporting successes and failures, and the level of participation of the beneficiaries of a policy or a programme.

- **USE**

For monitoring and evaluations to have an impact on decision-making, their findings must be perceived as relevant and useful and be presented in a clear and concise way. Ensuring utility of M&E is also the responsibility of decision-makers within the State and societal structures in commissioning, receiving and using evaluations.⁶

⁵ This paper was commissioned for the 3rd International Conference on National Evaluation Capacities, organized with the support of UNDP, on 29 September – 2 October 2013, in Sao Paulo, Brazil. The three topics of the conference are the credibility, independence and use of evaluation.

⁶ III International Conference on National Evaluation Capacities, draft concept note, Evaluation Office of the United Nations Development Programme, May 2013, www.nec2013.org/concept-note.html

Inventory of Innovations

Eleven innovations have been identified based on research and analysis of potential to achieve impact, to be particularly catalytic for M&E, and to have demonstrated feasibility – or at least have been piloted with the potential for scaling up. The table below presents a summary of the innovations, with more detail on each in the pages that follow.

<i>Innovations</i>	<i>Overview</i>
1. Multi-level Mixed Evaluation Method	This approach includes the deliberate, massive and creative use of mixed (quantitative and qualitative) methods on multiple levels for complex evaluations, particularly for service delivery systems
2. Participatory Statistics	An approach in which local people themselves generate statistics; participatory techniques are replicated with a large number of groups to produce robust quantitative data
3. Outcome Harvesting	An evaluation approach that does not measure progress towards predetermined outcomes , but rather collects evidence of what has been achieved , and works backward to determine whether and how the project or intervention contributed to the change
4. Crowdsourcing	A large number of people actively report on a situation around them, often using mobile phone technology and open source software platforms
5. The Micro-Narrative	The collection and aggregation of thousands of short stories from citizens using special algorithms to gain insight into real-time issues and changes in society
6. Mobile Data Collection	The targeted gathering of structured information using mobile phones, tablets or PDAs using a special software application
7. Data Exhaust	Massive and passive collection of transactional data from people's use of digital services like mobile phones and web content such as news media and social media interactions
8. Intelligent Infrastructure	Equipping all – or a sample of – infrastructure or items , such as roads, bridges, buildings, water treatment systems, handwashing stations, latrines, cookstoves, etc., with low-cost, remotely accessible electronic sensors
9. Remote Sensing	Observing and analyzing a distant target using information from the electromagnetic spectrum of satellites, aircrafts or other airborne devices
10. Real-Time, Simple Reporting	A means to reduce to a minimum the formal reporting requirements for programme and project managers and free up their time to provide more frequent, real-time updates , which may include text, pictures, videos that can be made by computer or mobile devices
11. Data Visualization	Representation of data graphically and interactively , often in the form of videos, interactive websites, infographs, timelines, data dashboards, maps, etc.

1. MULTI-LEVEL MIXED EVALUATION METHOD

<i>What is it?</i>	<ul style="list-style-type: none"> while parallel or sequential mixed methods have long been a typical design for development evaluations, this approach includes the deliberate, massive and creative use of mixed (quantitative and qualitative) methods on multiple levels for complex evaluations, particularly for service delivery systems
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> with multi-level mixed methods rapidly becoming the standard method in evaluations, this leads to a paradigm change in evaluation methodology; evaluations using a single method or only nominally apply a 'mixed method' approach (e.g., a largely quantitative evaluation complemented with a limited number of focus group discussions) may stop being acceptable to governments and development organizations (=impact) while not yet widely used for evaluations, tools and guidelines exist that describe multi-level mixed methods and some evaluations have experimented with the approach (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> particularly suitable for the evaluation of service delivery systems (e.g., district education departments, state-level health services, a national program to strengthen municipal governments) that require description and analysis of links between different levels for very complex and potentially expensive evaluations where multi-level mixed methods can provide valid and credible findings on the basis of smaller and more economical samples
<i>Link to conference topics</i>	<ul style="list-style-type: none"> going beyond more traditional sequential or parallel use of quantitative and qualitative methods, multi-level mixed methods can provide multiple perspectives and insights at limited costs which can dramatically enhance credibility
<i>Advantages and disadvantages:</i>	<p>Advantage:</p> <ul style="list-style-type: none"> the multiple mix of quantitative and qualitative methods can lead to more validity, reliability and variety of findings, insights into sensitive subjects, and the revealing of unexpected findings with policy implications multiple options for triangulation between different quantitative and qualitative methods and data sources <p>Disadvantage:</p> <ul style="list-style-type: none"> requires careful and deliberate planning of an appropriate methodological mix to be credible usually requires a team of evaluators with experience in quantitative and qualitative methods and in how to combine them at multiple levels
<i>Tools:</i>	<ul style="list-style-type: none"> <i>Introduction to Mixed Methods in Impact Evaluation</i>, Bamberger 2012, InterAction/The Rockefeller Foundation, Impact Evaluation Notes, No.3. August 2012, www.alnap.org/pool/files/mixed-methods-in-impact-evaluation-(english).pdf
<i>Examples of use</i>	<ul style="list-style-type: none"> <i>Mixing methods for rich and meaningful insight: Evaluating changes in an agricultural intervention project in the Central Andes</i>, Pradel/Cole/Prain, June 2013, BetterEvaluation. betterevaluation.org/sites/default/files/Mixing%20Methods%20for%20Rich%20and%20Meaningful%20Insight.pdf
<i>Further reading</i>	<ul style="list-style-type: none"> <i>A series on mixed methods in evaluation</i>, Simon Hearn, Better Evaluation Blog, Week 31, betterevaluation.org/blog/mixed_methods_part1 <i>The Mixed Methods Approach to Evaluation</i>, Bamberger 2013, June 2013, No. 1, Social Impact, socialimpact.com/press-releases/MME613.pdf <i>Special Issue: Mixed Methods and Credibility of Evidence in Evaluation</i>, Mertens/Hesse-Biber (ed.), in: New Directions for Evaluation, Summer 2013, Issue 138, pp. 1–119, onlinelibrary.wiley.com/doi/10.1002/ev.v2013.138/issuetoc <i>Integrating Survey and Ethnographic Methods to Evaluate Conditional Cash Transfer Programs</i>, Adato, IFPR, 2012, www.ifpri.org/sites/default/files/publications/ifpridpoo810.pdf

2. PARTICIPATORY STATISTICS

<i>What is it?</i>	<ul style="list-style-type: none"> an approach in which local people themselves generate statistics participatory techniques (participatory mapping, 'ten seeds technique', pairwise ranking, proportional piling, matrix ranking, etc.) are replicated with a large number of groups to produce robust quantitative data
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> participatory statistics change the paradigm that data collection is a top-down, centralized process by decentralizing statistical data collection and empowering citizens that are most familiar with local information (=catalytic) can make it possible to collect statistics on sensitive topics which are largely inaccessible to standard surveys (=impact) participatory approaches to M&E are well-tested; aggregation to produce statistics – even on the national scale – are increasingly tested and applied following methodological breakthroughs in the 2000s (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> particularly suitable for social and census mapping, household listing and scoring, wellbeing ranking, trend and change analysis, seasonal diagramming, preference ranking, causal-linkage analysis, problem trees if empowerment is part of a public policy, service or programme
<i>Link to conference topics</i>	<ul style="list-style-type: none"> generating and aggregating local data can make statistics more accurate, especially on sensitive issues, thus increasing accuracy, reliability and ultimately credibility and potential use of data
<i>Advantages and disadvantages:</i>	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> when carefully aggregated and triangulated, participatory statistics can produce more valid, reliable, and accurate data for M&E can empower citizens through an M&E process that has traditionally been highly extractive and externally controlled Disadvantage: <ul style="list-style-type: none"> can be time-consuming if citizens are asked to collect the necessary data needs to be built into a policy, service delivery or programme from the very beginning
<i>Tools:</i>	<ul style="list-style-type: none"> Participatory methods website, Institute of Development Studies, www.participatorymethods.org
<i>Examples of use</i>	<ul style="list-style-type: none"> in an Indian village, social mapping was used for a local census; the groups met separately and came up with populations of 239, 239, 242 and 247; when villagers checked, they found that '242' had three cases of double-counting, and '247', made by a small group on the edge of the village, included a family of eight who were in dispute with the rest of the village⁷
<i>Further reading</i>	<ul style="list-style-type: none"> <u>Who Counts? The Quiet Revolution of Participation and Numbers</u>, Chambers, Dec 2007, Institute of Development Studies, working papers 296, www.ids.ac.uk/files/Wp296.pdf <u>Who Counts? The Power of Participatory Statistics</u>, Holland (ed.), Practical Action Publishing 2013

⁷ [Who Counts? The Quiet Revolution of Participation and Numbers](http://www.ids.ac.uk/files/Wp296.pdf), Chambers, Dec 2007, Institute of Development Studies, working papers 296, p.27, www.ids.ac.uk/files/Wp296.pdf

3. OUTCOME HARVESTING

What is it?	<ul style="list-style-type: none"> an evaluation approach that - unlike some evaluation methods - does not measure progress towards predetermined outcomes, but rather collects evidence of what has been achieved, and works backward to determine whether and how the project or intervention contributed to the change an approach inspired by 'Outcome Mapping'⁸
Why is it innovative?	<ul style="list-style-type: none"> allows the evaluation of policies or programmes where relations of cause and effect are not fully understood and which have previously been difficult to evaluate (=catalytic) is suitable to search and identify unintended results that frequently escape more traditional evaluation methods (=impact) the outcome harvesting approach has been tested in evaluations since 2005⁹ (=concrete)
How and when best to use it:	<ul style="list-style-type: none"> when relationships of cause-effect of public policies or services are <i>unknown</i> in situations where complexities are high and outcomes are ill-defined or unclear (advocacy work, networks, research centres, think tanks, etc.)
Link to conference topic:	<ul style="list-style-type: none"> as a standardized process, outcome harvesting can increase the credibility of evaluations in situations where cause and effect are not clear or fully understood
Advantages and disadvantages:	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> can be used for complex policies, services or programmes which are not based on a clear results chain or theory of change Disadvantage: <ul style="list-style-type: none"> participatory process to reach a consensus can be time consuming a potential bias by evaluators in interpreting the expected outcome of public policies, programmes or services might skew findings
Tools:	<ul style="list-style-type: none"> Outcome Harvesting, 2012, Wilson-Grau/Britt, www.outcomemapping.ca/resource/resource.php?id=374
Examples of use	<ul style="list-style-type: none"> Retrospective 'Outcome Harvesting': Generating robust insights about a global voluntary environmental network, Rassmann/Smith/Mauremootoo/Wilson-Grau, April 2012, betterevaluation.org/sites/default/files/Retrospective%20outcome%20harvesting.pdf



⁸ Outcome Mapping (www.outcomemapping.ca) is a related but broader approach that includes a) intentional design, b) outcome and performance monitoring, and c) evaluation planning; Outcome *Harvesting* is more narrow in scope (roughly the equivalent of steps 8, 9, 10, 11 of Outcome Mapping); Source: Outcome Harvesting, Ricardo Wilson-Grau, PPP, OM Lab 2012, Beirut, Lebanon, 09-02-2012, www.outcomemapping.ca/resource/resource.php?id=363

⁹ Outcome Harvesting, Ricardo Wilson-Grau, PPP, OM Lab 2012, Beirut, Lebanon, 09-02-2012, www.outcomemapping.ca/resource/resource.php?id=363

4. CROWDSOURCING

<i>What is it?</i>	<ul style="list-style-type: none"> • a large number of people actively report on a situation around them, often using mobile phone technology and open source software platforms • = “citizen reporting” or “see something, text something”
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> • while traditional M&E is sometimes perceived as intrusive and extractive, citizen reporting is a monitoring and evaluation technique that results in a win-win situation for M&E, potentially leading to greater citizen participation and civic engagement (=impact) • allows data collection a) on a scope usually not feasible through traditional M&E tools, and b) on sensitive issues that more traditional tools would struggle to cover (=catalytic) • a great variety of open source software platforms already exist and the approach is implemented in a number of countries and projects (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> • where requirements for data collection go beyond the scope of more traditional monitoring or evaluations or when quantitative information is required • for sensitive issues where anonymity is preferred (e.g., corruption)
<i>Link to conference topics</i>	<ul style="list-style-type: none"> • if systems are set up right, crowdsourced data tends to be more difficult to manipulate and less vulnerable to biased interpretation, therefore potentially increasing independence and credibility
<i>Advantages and disadvantages:</i>	<p><i>Advantage:</i></p> <ul style="list-style-type: none"> • can gather massive, location specific data in real-time with lower running costs than more traditional methods¹⁰ • can boost civic engagement by establishing direct channels of communication from the ground up <p><i>Disadvantage:</i></p> <ul style="list-style-type: none"> • requires incentives for citizens to continuously participate • requires tailoring a crowdsourcing platform
<i>Tools:</i>	<ul style="list-style-type: none"> • Ushahidi platform, a crowdsourcing mapping tool, www.ushahidi.com • SeeClickFix, a communications platform for citizens to report non-emergency issues, and governments to track, manage, and reply, seeclickfix.com • FrontlineSMS, an open source software to distribute and collect information via text messages (SMS), www.frontlinesms.com • RapidSMS, a open-source framework for dynamic data collection, logistics coordination and communication, leveraging basic SMS mobile phone technology, www.rapidsms.org • Ideascale, ideascale.com, a platform that gives stakeholders a platform to share, vote and discuss feedback
<i>Examples of use</i>	<ul style="list-style-type: none"> • in the US-American city of Chicago, citizens report issues and request services from local authorities using SeeClickFix (seeclickfix.com) and track the solution online¹¹ • Ipaidabribe, a platform to tackle corruption by harnessing the collective energy of citizens; data can be used for evaluations as well as for monitoring, www.ipaidabribe.com • Ureport, an SMS-based system that allows young Ugandans to speak out on what's happening in communities; data can be used for evaluations as well as for monitoring, ureport.ug • Tracking Violence Against Children in Benin, an SMS-based system based on FrontlineSMS in Benin, www.youtube.com/watch?v=3zVqwkUoVM • Harass Map, a system in Egypt for anonymously reporting sexual harassment via SMS and instantly mapping the reports online; quantitative and qualitative data can be used for evaluations as well as for monitoring harassmap.org/en/ • Smoking Violations Reporting Platform, a platform used to report smoking violations in Kosovo, 77.81.240.20/smoking_violations/ • Green Clean, a crowdsourcing platform and mobile application for reporting waste in Montenegro using the

¹⁰ e.g., checking all the defects in the traffic lights by having the city officials patrolling is expensive, while asking citizens or taxi drivers to report defective traffic lights is cheaper

¹¹ www.cityofchicago.org/city/en/depts/mayor/press_room/press_releases/2012/october_2012/mayor_emanuel_announcesinnovativepartnershipwithseeclickfixtofur.html

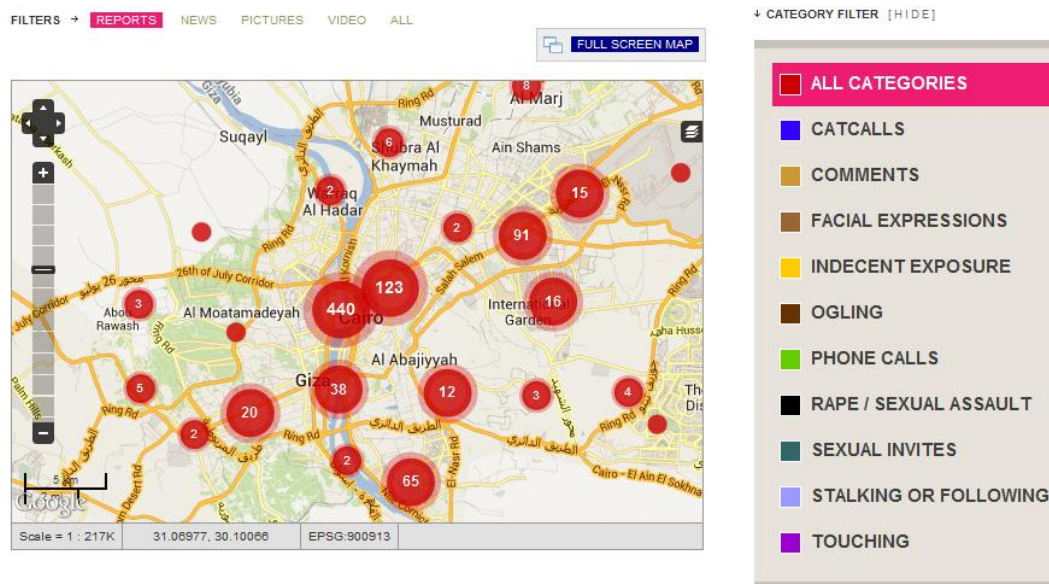
Ushahidi platform, cleangreen.arhuscentri.me

Further reading

- **Crowdsourcing in Local Government**, Christina Rogawski, Local Gov 3.0, 04/08/2013, gov30.typepad.com/local/2013/04/parallel-to-changes-on-the-federal-level-social-media-is-rapidly-altering-how-citizens-interact-with-their-local-gover.html
- **Future of Real-Time Information**, UN Global Pulse/PSFK, www.unglobalpulse.org/projects/future-real-time-report
- **Changing the World, One Map at a Time**, Patrick Meier, re:publica 2011, www.youtube.com/watch?v=Hh_PiVqf8BA

EXAMPLE: HARASSMAP IN EGYPT

HarassMap is a tool for victims and witnesses all over Egypt to **anonymously share their experiences of harassment, and to report it**. The map collects all reports, and each report appears on the map as a red dot. When you click on it, the full text of the report is displayed. Looking at the map gives you an overview of where harassment happens, as well as the opportunity to delve deeper and learn more about the individual stories.



Tools for sensitive issues like the HarassMap can provide evaluators with data and information – both quantitative as well as qualitative – that would otherwise **simply not be available**. Administrative data on harassments, e.g., through police report, will likely be a) only limited to extreme cases of sexual violence like rape and sexual assault, and b) severely under-representing the actual situation.

A challenge, to use quantitative data from tools like HarassMap over time, however, is the **non-linear nature of participation**. A strong rise in reported harassment does not necessarily indicate a worsening of the situation – it can simply be the result of greater awareness about harassments, or simply be a reflection that the tool is becoming more known among citizens.

Source: harassmap.org/en/

5. THE MICRO-NARRATIVE

What is it?	<ul style="list-style-type: none"> the collection and aggregation of thousands of short stories from citizens using special algorithms to gain insight into real-time issues and changes in society
Why is it innovative?	<ul style="list-style-type: none"> information collected in the shape of stories is <i>interpreted by the person who has told a story</i>, therefore removing the need for – and the potential bias of – a third party to interpret the data; this meets a core challenge for evaluations to reduce or eliminate potential biases by evaluators or monitoring staff (=impact) by using a <i>large</i> number of stories, this approach turns previously mostly <i>qualitative</i> data (e.g., in the form of a limited number of not representative case studies included in an evaluation) into aggregated statistical data; the approach has the potential to replace traditional monitoring tools like surveys and focus groups (=catalytic) pattern detection software for analyzing micro-narratives exist and the approach is already implemented in a number of countries and projects (=concrete)
How and when best to use it:	<ul style="list-style-type: none"> when real-time quantitative information from a large number of beneficiaries is required that cannot otherwise be collected
Link to conference topics	<ul style="list-style-type: none"> micro-narratives allow evaluators to collect independent quantitative information from a potentially large number of citizens, potentially increasing the credibility of data collected
Advantages and disadvantages:	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> provides e.g., government with access to real-time data for faster, more informed decision making it makes it possible to design, monitor and evaluate evidence-based policies and programmes under conditions of uncertainty by detecting weak initial signals in the stories collected, this approach can provide early warning signs for policy or programme implementation in the communities they are trying to effect; this introduces the possibility for the first time of <i>predicting</i> future developments and building foresight into decision-making lower running costs once set up compared to repeated surveys Disadvantage: <ul style="list-style-type: none"> high initial investment in pattern detection software (e.g., proprietary software like Sensemaker®) and information campaigns to inform and motivate participants citizens must have the skills and continuous incentives to participate
Tools	<ul style="list-style-type: none"> Sensemaker, a proprietary pattern detection software for analyzing micro-narrative, www.sensemaker-suite.com, by Cognitive Edge (cognitive-edge.com) GlobalGiving Story Tools, www.globalgiving.org/story-tools/
Examples of use	<ul style="list-style-type: none"> Evaluating Development Initiatives through Micro-Narrative Capture and Self-Tagging in Kenya, GlobalGiving, www.globalgiving.org/jcr-content/gg/landing-pages/story-tools/files/microsoft-powerpoint---makingseofsensemaker.pdf Using Sensemaker to measure the level of inclusion of smallholder farmer in Vietnam and Equator, Vredeseilanden/VECO, 02-05-2013, www.veco-ngo.org/blog/using-sensemaker-measure-learn-and-communicate-about-smallholder-farmer-inclusion
Further reading	<ul style="list-style-type: none"> GlobalGiving Storytelling project, www.globalgiving.org/stories/ The "Real Book" for story evaluation methods, Marc Maxson, GlobalGiving Foundation, May 2012, chewychunks.files.wordpress.com/2012/05/storytelling-realbook-may-23-2012.pdf Storytelling: The challenge of collection, Milica Begovic Radojevic, Voices from Eurasia blog, Knowledge and Innovation Team, UNDP Regional Center in Bratislava, 27-06-2013, europeandcis.undp.org/blog/2013/06/27/storytelling-the-challenge-of-collection/

6. MOBILE DATA COLLECTION

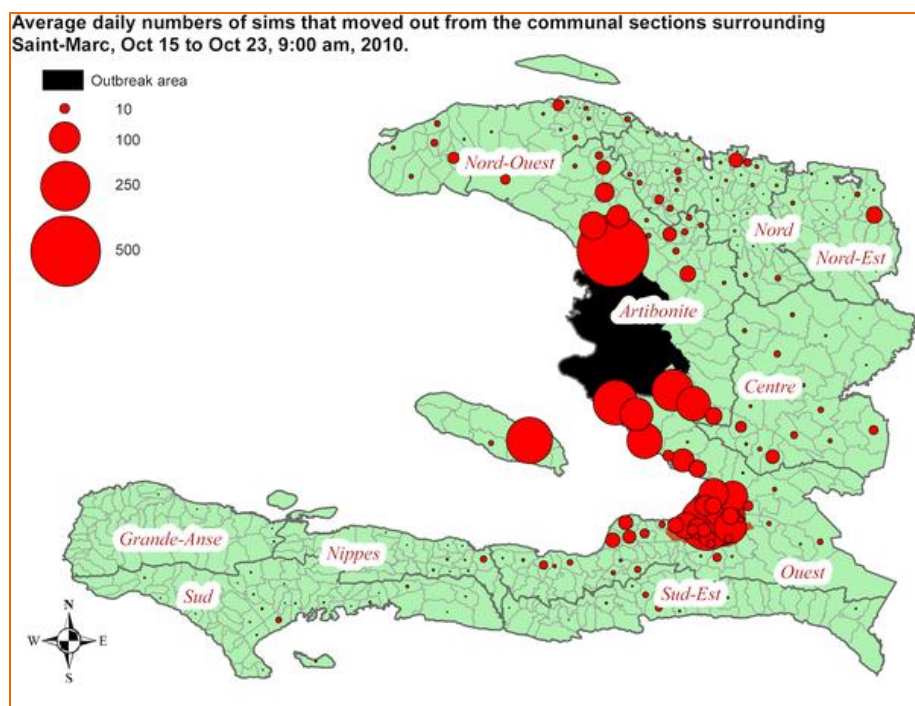
<i>What is it?</i>	<ul style="list-style-type: none"> the targeted gathering of structured information using mobile phones, tablets or PDAs using a special software application differs from citizen feedback or crowd-sourcing, which mine unstructured digital information; instead, mobile data collection systems run designed surveys which collect specific information from a target audience
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> in addition to an incremental change from paper-based surveys, mobile data collection can include completely new information in designed surveys: geographic location through automatic geo-tagging, photographs and video (e.g., as additional evidence that corroborates information obtained through a questionnaire) and audio (to record survey responses as proof and for further analysis) (=catalytic) availability of inexpensive mobile phones and specialized software platforms (to build a mobile data collection survey) are widely available (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> where the advantages of mobile data collection outweigh the advantages of a more traditional paper-based survey where data collection requires or significantly benefits from audio, video or geographic information
<i>Advantages and disadvantages:</i>	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> can improve the timeliness and accuracy of the data collection platforms allow one to customize the survey to include photographs, voice recordings, GPS coordinates, etc. usually not collected through a paper-based survey Disadvantage: <ul style="list-style-type: none"> technology alone will not improve the survey design or instrument potential bias in favour of well educated or well-off citizens
<i>Tools:</i>	<ul style="list-style-type: none"> numerous platforms and tools; for a detailed list see: NOMAD preliminary list of mobile data collection technologies, Annex 1, in: <i>Mobile Data Collection Systems: A review of the current state of the field</i>, Jung 2011, NOMAD, humanitarian-nomad.org/wp-content/uploads/2013/03/NOMAD-MDC-Research.pdf
<i>Examples of use</i>	<ul style="list-style-type: none"> Reboot-Somalia, www.innovation-series.com/2012/06/21/reboot-somalia/
<i>Further reading:</i>	<ul style="list-style-type: none"> Mobile data collection, Betterevaluation.org, betterevaluation.org/evaluation-options/mobile_data_collection Mobile-based technology for monitoring & evaluation: A Reference Guide for Project Managers, M & E Specialists, Researchers, Donors, CLEAR, www.theclearinitiative.org/mobile-based-tech.pdf Mobile Data Collection Systems: A review of the current state of the field, Jung 2011, NOMAD, humanitarian-nomad.org/wp-content/uploads/2013/03/NOMAD-MDC-Research.pdf Collecting High-Frequency Data Using Mobile Phones: Do Timely Data Lead to Accountability?, Croke/Dabalen/Demombynes/Giugale/Hoogeveen, in: <i>Economic Premise</i>, The World Bank, Jan 2013, No. 202, siteresources.worldbank.org/EXTPREMNET/Resources/EP102.pdf

7. DATA EXHAUST

<i>What is it?</i>	<ul style="list-style-type: none"> wherever citizens use mobile phones or access web content, they are leaving trails behind in the form of transactional data called "data exhaust" data exhaust is massive, passively collected transactional data from people's use of digital services like mobile phones and web content such as news media and social media interactions, which distinguishes it from other elements of big data such as citizen reporting, crowd-sourcing or physical sensors
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> the availability of passive transactional data has increased exponentially; the private sector is already using innovative technologies to analyze data exhaust from commercial services to understand customers, identify new markets, and make investment decisions; for monitoring and evaluating public policies, services and programmes, analyzing existing data exhaust can dramatically change how M&E is done and what data is available for M&E (=catalytic) commercial services have demonstrated that making use of data exhaust is possible and useful (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> when analyzed in bulk, it makes it possible to calculate the current status of entire communities and identify changes happening in real-time through web-based and social media search queries this conversational data can also be used to predict human behaviour
<i>Link to conference topics:</i>	<ul style="list-style-type: none"> can allow mining of massive qualitative data to distil quantitative information which would otherwise be beyond the reach of traditional M&E, thereby increasing the potential credibility of monitoring or an evaluation
<i>Advantages and disadvantages:</i>	<ul style="list-style-type: none"> <i>Advantage:</i> <ul style="list-style-type: none"> data is already collected and available <i>Disadvantage:</i> <ul style="list-style-type: none"> potential bias that makes digital data skewed in favour of better educated, well-off citizens while neglecting those less articulate or with less access to digital services
<i>Tools:</i>	<ul style="list-style-type: none"> CellCensus makes use of cell phone records which show the social network of a person or his/her mobility patterns which strongly predictive of socio-economic factors, www.vanessafriasmartinez.org/CenCell.html Google Trends, a free tool to track the level of Google search requests over time www.google.com/trends/ Recorded Future, a commercial service that scan tens of thousands of digital sources to explore the past, present and predicted future of a wide variety of things, www.recordedfuture.com
<i>Examples of use</i>	<ul style="list-style-type: none"> Google.org Flu Trends, www.google.org/flutrends/ Google.org Dengue Trends, www.google.org/dengu Trends/
<i>Further reading:</i>	<ul style="list-style-type: none"> Data Exhaust, UN Global Pulse, www.unglobalpulse.org/topics/data-exhaust Enhancing Public Policy Decision Making using Large-Scale Cell Phone Data, Martinez/Frias-Martinez 2012, blog, Sept. 2012, www.unglobalpulse.org/publicpolicyandcellphonedata

EXAMPLE: TRACKING POPULATION MOVEMENTS WITH MOBILE PHONE NETWORK DATA

No rapid and accurate method exists to track population movements after disasters. As an alternative, researchers estimated the **population movement in Haiti** during the **2010 earthquake and cholera outbreak** using **Mobile Phone Network Data**.



The simulation is based on **position data of SIM cards** from the largest mobile phone company in Haiti (Digicel). Geographic positions of SIM cards were determined by the location of the mobile phone tower through which each SIM card connects when calling.

The simulation concluded that that **routinely collected data on the movements of all active SIM cards in a disaster-affected nation** could, with potentially high validity, be used to **provide estimates of the magnitude, distribution, and trends in population displacement**. The method is feasible to use for close to **real-time monitoring of population movements** during an infectious disease outbreak

Using position data of SIM cards requires an **agreement with mobile phone operators** prior to an emergency or on an ongoing basis to be able to tap into the data when required. Due to privacy concerns, mobile phone data needs to be **anonymous**.

Source: *Improved Response to Disasters and Outbreaks by Tracking Population Movements with Mobile Phone Network Data: A Post-Earthquake Geospatial Study in Haiti*, Bengtsson/Lu/Thorson/Garfield/von Schreeb 2011, PLoS Med 8(8), www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001083

8. INTELLIGENT INFRASTRUCTURE

<i>What is it?</i>	<ul style="list-style-type: none"> equipping all – or a sample of – infrastructure or items, such as roads, bridges, buildings, water treatment systems, handwashing stations, latrines, cookstoves, etc., with low-cost, remotely accessible electronic sensors
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> automatization of data collection can radically change how and how frequently data is collected in cases where policies, services or programmes include infrastructure or items (=impact) involves unconventional partnerships between high-tech research departments, start-up enterprises, governments and development organizations (=catalytic) inexpensive electronic sensors have recently become commercially available, but there are only few examples where they have started to be used for M&E (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> when monitoring or an evaluation attempts to measure and track over time the value of infrastructure or public services to the people (e.g., to determine whether the infrastructure is actually used enough to justify the cost) low-cost, low-power, reliable electronic sensors attached to infrastructure relay usage or operational data in near real-time to the internet via cellular phone technology, feeding into an automated, remote monitoring system when data is actually required for a certain purpose, and not simply because the technology exists
<i>Link to conference topics</i>	<ul style="list-style-type: none"> more objective and real-time operational data on the usage and performance of infrastructure or services may result in greater credibility and use of monitoring information and evaluations
<i>Tools</i>	<ul style="list-style-type: none"> SWEETSense, a technology and concept which was tested and demonstrated by the Sustainable Water, Energy and Environmental Technologies Laboratory (SWEETLab) at the Portland State University, www.sweetlab.org/sweetsense/
<i>Advantages and disadvantages:</i>	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> the massive amounts of data generated can be used to better understand programmatic, social, economic, and seasonal changes and behavioural patterns that influence the quality of a policy or a service real-time data on infrastructure or public service use makes faster, more informed decisions possible potentially lower running costs once system is set up compared to repeated sample surveys using experts and enumerators Disadvantage: <ul style="list-style-type: none"> initially expensive, high-tech monitoring option which requires special technical expertise lack of maintenance or malfunctioning equipment can 'contaminate' data potential privacy concerns if users, or user groups, can be identified
<i>Examples of use</i>	<ul style="list-style-type: none"> monitoring pedestrian footbridge usage at three remote sites in rural Guatemala, sensors on ground water hand pumps in Uganda, portable latrine usage in India, usage monitors for a statistically significant sample of handwashing stations in Indonesia, sensors on school-based water treatment systems in Nepal, www.sweetlab.org/projects/ HP's Central Nervous System for the Earth (CeNSE), an intelligent network of nanoscale sensors designed to feel, taste, smell, see, and hear what is going on in the world, www8.hp.com/us/en/hp-information/environment/cense.html
<i>Further reading</i>	<ul style="list-style-type: none"> Future of Real-Time Information, UN Global Pulse/PSFK, www.unglobalpulse.org/projects/future-real-time-report Measuring Sustainability, Thomas, in: Solutions, August 2012, www.thesolutionsjournal.com/node/1138

9. REMOTE SENSING

<i>What is it?</i>	<ul style="list-style-type: none"> observing and analyzing a distant target using information from the electromagnetic spectrum of satellites, aircrafts or other airborne devices passive sensors detect natural radiation (e.g., reflected sunlight through film photography); active remote sensing involves the emitting of energy in order to scan objects and areas
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> since the early days of satellite remote sensing in the 1950s, remote sensing has been applied to many disciplines in natural science; applying it to social research and monitoring and evaluations of social public policies and programmes can have a potentially great impact for large-area monitoring (=impact) allows remote monitoring in areas previously inaccessible due to physical barriers or security concerns (=catalytic) passive and active remote sensing information and commercial technology for collecting information (e.g., mini-drones; pattern recognition software) is available (=practical)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> when access is limited due to physical barriers or security concerns for observable changes on the earth's surface like agriculture, deforestation, glacial features, oceans, natural resource management in general, but also for monitoring social public policies and programmes related to urban areas, demography, land-use and land-cover, humanitarian conflicts or disasters, or as a proxy for wealth for social policies and programmes, remote sensing data might be at its most valuable when used in combination with traditional methods such as surveys, public records, interviews and direct observation
<i>Link to three conference topics</i>	<ul style="list-style-type: none"> obtaining objective data on areas with limited physical access or for large areas can increase the credibility of monitoring and evaluating of public policies or programmes
<i>Advantages and disadvantages:</i>	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> possible to collect data on dangerous or inaccessible areas observed objects or people are not disturbed Disadvantage: <ul style="list-style-type: none"> privacy concerns over government misuse of information potentially high costs for obtaining images or for primary data collection using remote sensors
<i>Tools:</i>	<ul style="list-style-type: none"> senseFly operates autonomous mini-drones and related software solutions for accurate mapping of mining sites, quarries, forests, construction sites, crops, etc. , www.sensefly.com
<i>Examples of use</i>	<ul style="list-style-type: none"> Grassroots Mapping is a series of participatory mapping projects focused on communities involved in land disputes and using low-cost and simple devices such as balloons and kites, grassrootsmapping.org OpenIR maps ecological features and risks revealed by infrared satellite integrating crowdmapping, openir.media.mit.edu/main/ Using luminosity data as a proxy for economic statistics, Xi Chena/Nordhaus 2011, in: PNAS, vol. 108 no. 21, www.pnas.org/content/108/21/8589.full
<i>Further reading</i>	<ul style="list-style-type: none"> Remote Sensing in Social Science Research, Hall 2010, in: The Open Remote Sensing Journal, 2010, 3, 1-16, www.benthamscience.com/open/tormsj/articles/V003/1TORMSJ.pdf Measurement and Monitoring of the World's Forests: A Review and Summary of Remote Sensing Technical Capability, 2009–2015, Fagan/DeFries, Resources for the Future 2009, www.rff.org/rff/documents/rff-rpt-measurement%20and%20monitoring.pdf From wealth to health: modelling the distribution of income per capita at the sub-national level using night-time light imagery, Ebener/Murray/Tandon/Elvidge, in: International Journal of Health Geographics 2005, www.ij-healthgeographics.com/content/4/1/5 Remote Sensing – An Effective Data Source for Urban Monitoring, Taubenböck & Esch, in: earthzine, www.earthzine.org/2011/07/20/remote-sensing---an-effective-data-source-for-urban-monitoring/

10. REAL-TIME, SIMPLE REPORTING

<i>What is it?</i>	<ul style="list-style-type: none"> • a means to reduce to a minimum the formal reporting requirements for programme and project managers and free up their time to provide more frequent, real-time updates, which may include text, pictures, videos that can be made by computer or mobile devices
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> • can overcome an often-voiced dissatisfaction with excessive, detailed and frequent reporting requirements that may result in unread and under-used reports (=impact) • through mutual agreement, the tendency to more and more data collection and analysis is reversed; long-established but possibly outdated reporting practices are eliminated or complemented, allowing instead for real-time reporting (=catalytic) • concepts and digital platforms exist for real-time, simple reporting exist and are in use (=concrete)
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> • can be used for all types of public policies, services and programmes if the minimum information needs can be covered by the short reports
<i>Link to conference topics</i>	<ul style="list-style-type: none"> • short but real-time reports are more likely to be used by management for decision-making
<i>Advantages and disadvantages:</i>	<p><i>Advantage:</i></p> <ul style="list-style-type: none"> • near real-time updating of progress and results • the voices and faces of citizens become more and more directly visible through photos, video and audio recordings • works well with organizations or units with a large number of programmes, projects and partners <p><i>Disadvantage:</i></p> <ul style="list-style-type: none"> • reports are limited to key information and do not go into much detail • potential tendency to collect the most easy-to-measure data, resulting in a reporting bias
<i>Tools:</i>	<ul style="list-style-type: none"> • Akvo Really Simple Reporting, www.akvo.org/web/akvo-rsr, is a web-based system that brings complex networks of projects online and instantly shares progress with everyone involved and interested on multiple websites
<i>Examples of use</i>	<ul style="list-style-type: none"> • Dutch WASH Alliance, www.washalliance.nl • UNDP, undp.akvoapp.org/en/
<i>Further reading</i>	<ul style="list-style-type: none"> • Akvo Really Simple Reporting, www.akvo.org/web/akvo-rsr

11. DATA VISUALIZATION

<i>What is it?</i>	<ul style="list-style-type: none"> Representation of data graphically and interactively, often in the form of videos, interactive websites, infographs, timelines, data dashboards,¹² maps,¹³ etc.
<i>Why is it innovative?</i>	<ul style="list-style-type: none"> previously heavily reliant on text to communicate monitoring or evaluation findings, the increasing use of suitable data visualization tools in M&E changes the way data is analyzed and represented (=catalytic) the graphical and interactive presentation of data has the potential to dramatically increase the accessibility of complex data sets and, in turn, the use of the data (=impact) a great variety of free and commercial data visualization tools are available and increasingly used for monitoring, reporting and evaluations
<i>How and when best to use it:</i>	<ul style="list-style-type: none"> to better identify trends and patterns of complex or large data sets during the analysis phase of monitoring or of an evaluation to better communicate information resulting from monitoring or from evaluations
<i>Link to conference topics</i>	<ul style="list-style-type: none"> if complex and/or large data sets are visualized effectively, it enhances the chance that it is used by decision makers
<i>Advantages and disadvantages:</i>	<ul style="list-style-type: none"> Advantage: <ul style="list-style-type: none"> effectively visualized data is more like to be understood and used can identify trends and patterns which would otherwise be unclear or difficult to discern Disadvantage: <ul style="list-style-type: none"> visualization needs to fit the purpose of analysis and the intended target audience of communication identifying and putting together data visualization can be time-consuming, or costly if outsourced
<i>Tools:</i>	<ul style="list-style-type: none"> DevInfo, www.devinfo.org, a database system for organizing, storing and visualizing data in a uniform way Tableau, www.tableausoftware.com, a set of software solutions to combine, analyze and visually show data Google Fusion Tables, www.google.com/drive/apps.html#fusiontables, a tool to combine, visualize and share data Visual.ly, visual.ly, or Easel.ly www.easel.ly, tools to get inspired by and/or commission infographics TimelineJS, timeline.verite.com, a tool to establish visually-rich, interactive timelines
<i>Examples of use</i>	<ul style="list-style-type: none"> Baltimore DataMind, baltimoredatamind.org, provides neighbourhood-level data in an interactive map to promote collaboration, advocacy, informed decisions, and effective policy making Gapminder World, www.gapminder.org/world/, a web-service displaying time series of development statistics for all countries by converting numbers into animated and interactive graphics Infographics by UNDP using Visual.ly, visual.ly/users/undpeuropeandcis
<i>Further reading</i>	<ul style="list-style-type: none"> Visualize data, Betterevaluation.org, betterevaluation.org/plan/describe/visualize_data More than a Pretty Picture: Using Poverty Maps to Design Better Policies and Interventions, The World Bank 2007, siteresources.worldbank.org/INTPGI/Resources/342674-1092157888460/493860-1192739384563/More_Than_a_Pretty_Picture_ebook.pdf Information Dashboard Design, Few 2006, O'Reilly Media, it-ebooks.info/book/1481/

¹² visual displays of the most important information consolidated on a single screen or page

¹³ spatial and conceptual representations of important physical elements of an area to assist in identifying patterns (e.g., demographic mapping, GIS Mapping, Geotagging, social mapping, interactive mapping)

EXAMPLE: INTERACTIVE GRAPHS

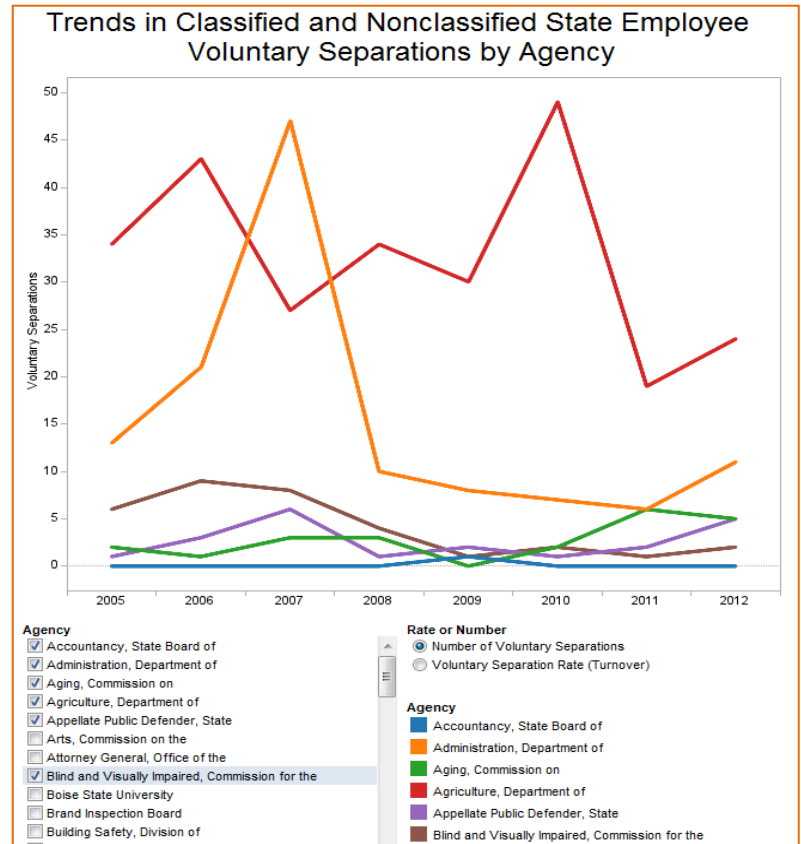
The Legislature's Office of Performance Evaluations in the US-American State of Idaho¹⁴ turned an annex of a standard, text-heavy evaluation report¹⁵ into an **interactive chart** on agency turnover.

The interactive chart is hosted on a public web server for **policymakers** and members of the **public**. The office made use of Tableau Software¹⁶, a commercial set of software solutions to visually show and publish data.

This is clearly only a very **first step** in applying visualization tools to evaluations of public policies, services or programmes. The potential for data visualization for evaluations appears vast.

Privacy, however, remains a concern when using platforms like Tableau. Once published, data should not be expected to be private or confidential any more.

The interactive chart can be tried out at public.tableausoftware.com/views/VoluntarySeparationRatesandIncidence/Trends.



Sources: (1) Trends in Classified and Nonclassified State Employee Voluntary Separation by Agency, public.tableausoftware.com/views/VoluntarySeparationRatesandIncidence/Trends, Annex to the State Employee Compensation and Turnover Evaluation Report, Legislature's Office of Performance Evaluations, January 2013, www.legislature.idaho.gov/oep/publications/reports/r1303.pdf; (2) Bryon Welch and Rakesh Mohan on Interactive Presentation of Evaluation Reports, AEA365 | A Tip-a-Day by and for Evaluators, American Evaluation Association, aea365.org/blog/?tag=data-visualization

¹⁴ www.legislature.idaho.gov/oep/index.htm

¹⁵ State Employee Compensation and Turnover Evaluation Report, www.legislature.idaho.gov/oep/publications/reports/r1303.pdf

¹⁶ www.tableausoftware.com

Trends in Innovation in Monitoring & Evaluation

An **analysis of the 11 key innovations** identified above that have a potentially significant impact on M&E, are catalytic for M&E and sufficiently concrete lead to some observations on current trends:

- **INNOVATIONS FOCUS ON CREDIBILITY**

Many of the key interventions identified result in improving **credibility** of monitoring information and evaluation findings (e.g., multi-level mixed methods, participatory statistics, intelligent infrastructure, remote sensing). Only two innovations are directly designed to enhance **utility** and use of evaluations and monitoring information (real-time, simple reporting and data visualization), and two innovations (crowdsourcing and micro-narrative) result in more **independently** collected data by opening up more direct communication channels with citizens or beneficiaries.

- **ICT SPARKS INNOVATIONS IN M&E**

Most of the key innovations identified have a **strong ICT component** (crowdsourcing, micro-narrative, mobile data collection, data exhaust, intelligent infrastructure, remote sensing, real-time simple reporting and data visualization). It appears that the sudden supply of sophisticated ICT M&E tools has **sparked a wave of innovations** in monitoring and evaluation which would not have been possible only a few years ago.

- **ACADEMIA, PRIVATE SECTOR AND DEVELOPMENT ORGANIZATIONS INNOVATE**

Many of the innovations mentioned are initially developed or adapted by **NGOs or bilateral or multilateral development organizations** (many mobile data collection platforms, real-time, simple reporting, for example Akvo, data visualization tools such as DevInfo and Gapminder, and crowdsourcing tools such as the Ushahidi platform, Frontline SMS or RapidSMS). Some are originating within the communities of **academia and development practitioners** (such as the multi-level mixed method, participatory statistics, outcome harvesting). A number of innovative tools are also coming from **academia but using a private sector approach** (algorithm and software for micro-narrative such as Sensemaker, some crowdsourcing applications, and intelligent infrastructure like SWEETSense). Finally, a surprising number of innovative tools are coming from the **private sector** (remote sensing such as senseFly; data exhaust, data visualization tools such as Tableau, Visual.ly, Easel.ly, TimelineJS; data exhaust such as Recorded Future or Google Trends, and some crowdsourcing tools such as SeeClickFix) – which might indicate a greater reliance of development on commercial, private sector innovation.

Innovations Focus on Monitoring, less so on Evaluations – but distinctions get blurred

Most of the innovations can be **directly used for monitoring** public policies, programmes and service delivery, while only a few innovations focus exclusively on evaluation (multi-level mixed evaluation methods, outcome harvesting). This could imply that in the current environment, the push for innovations is mostly driven by the need and the possibilities for better, more frequent and real-time monitoring. The **clear distinction between monitoring and evaluation*** in traditional M&E, however, appears to get **more and more blurred**:

- Many of the innovative tools can be **applied for monitoring as well as for evaluations** (e.g., crowdsourcing, micro-narrative, mobile data collection, data exhaust, data visualization).
- With better data collection tools for monitoring, **information** which was traditionally only collected occasionally through evaluations (e.g., through a baseline, mid-term and final survey) now becomes **available on a continuous basis**.
- The increasing demand for **real-time information** increases the need for solid monitoring information over much less frequent evaluations.

*Monitoring is continuous, often internal and tracks delivery and the achievement of results; evaluation is one-off, typically external and goes beyond results by questioning their value.

When & How to Apply Innovations

Whether, when and how to apply which innovation depends very much on the *objective* of monitoring and evaluation. Which approaches, techniques and tools work best in which context and under which circumstances depend on a number of questions:¹⁷

- **DOES THE INNOVATION MEET A CLEARLY IDENTIFIED NEED?**

Planning for monitoring and evaluation must always start with a careful consideration of a clearly articulated need for (and subsequent use of) new information. The use of innovative tools, approaches and technologies for M&E is not an end by itself – despite the apparent appeal of some of the technological innovations such as aerial pictures, sensors or iPads for surveys. *For example, outcome harvesting can be a fitting approach to evaluate a national network of research institutes. Aerial images or sensors can be an aid for real time monitoring during natural disasters when certain areas are not accessible. Crowd-sourcing can be the preferred option where no other tool is able to collect the necessary information within reasonable costs and resources, e.g., when monitoring illegal waste dumps across a country.*

- **DO WE HAVE THE ORGANIZATIONAL CAPACITY TO MAKE INFORMED DECISIONS ABOUT INNOVATIONS?**

Deciding why, when and how to apply innovative tools and approaches in M&E requires sufficient organizational capacity. This includes being familiar with new tools and approaches and – in the case of technical innovations – having at least an overview of the currently available technical possibilities, products and practices.

- **CAN WE MOBILIZE SUFFICIENT RESOURCES FOR AN UP-FRONT INVESTMENT?**

Although innovative M&E approaches and tools may reduce costs in the medium and long-term, some require a significant front-loaded investment – particularly technical innovations. While there is a great variety of useful free or open source software available, more sophisticated platforms (or full feature versions of it) are often propriety and copyrighted software.

- **WHAT IS THE READINESS AND CAPABILITY TO CHANGE ESTABLISHED M&E PRACTICES?**

Investing in innovative M&E only makes sense if it is likely that new information is absorbed and acted upon. Governments, ministries, departments, units, etc. need to be politically and institutionally prepared to change course mid-way through implementation if this is required. *For example, experience shows that decision-makers can fail to act upon information despite the fact that decent early warning systems are functioning.*

- **CAN WE FOLLOW UP DATA COLLECTION WITH A THOROUGH ANALYSIS OF DATA?**

While innovative tools and approaches might yield a lot of new data, this data will not be useful if not properly analyzed. If an organization does not have this capacity, it might be a better option to invest in the analysis of already existing data.

- **ARE CITIZENS MOTIVATED TO PARTICIPATE?**

Even if mobile phones are ubiquitous, citizens might lack incentives to voice their opinion, participate in surveys or be part of a crowdsourcing effort. Citizens might not see immediate benefits in participatory statistics. This can be a cultural problem (e.g., *not complaining or not holding authorities accountable*), a practical problem (e.g., *people might not find the time to collect data or provide constant feedback*) or a 'moral' problem (e.g., *if citizens feel that their voice is used but not fed back to them in a meaningful manner*). This intended use of data by government institutions might even be a deterrent for citizens to participate in monitoring efforts. Sustaining participation therefore requires carefully designed strategies. *For example, gamification – the use of computer game features like badges, levels or leaderboards – is increasingly applied in government programmes and has shown potential for M&E as well.*¹⁸

THE CHALLENGE OF PARTICIPATION IN INNOVATIVE M&E

- offering **access** to all the collected data and training citizens and organizations how to analyze it
- **nudging** people to get involved, using e.g., media, the curiosity factor, competition, gamification
- making citizens more **comfortable** by providing clear guidance how to contribute, and explaining well why this information is important and what it will be used for

Source: Storytelling: The challenge of collection, Milica Begovic Radojevic, Knowledge and Innovation Team, UNDP Regional Center in Bratislava, Voices from Eurasia blog, 27-06-2013, europeandcis.undp.org/blog/2013/06/27/storytelling-the-challenge-of-collection/

¹⁷ partially based on: *Benefits, barriers and tips for ICT-enabled M&E*, Raftree 2013, in: Wait... What?, 17-04-2013, <http://lindaraftree.com/2013/04/17/benefits-barriers-and-tips-for-ict-enabled-me/>, *ICTs and M&E at the South Asia Evaluators' Conclave*, Raftree 2012, in: Wait... What?, blog, 12-03-2012, lindaraftree.com/2013/03/12/icts-and-me-at-the-south-asia-evaluators-conclave/, *12 tips on using ICTs for social monitoring and accountability*, Raftree 2012, in: Wait... What?, blog, 09-08-2012, lindaraftree.com/2012/08/09/tips-on-using-icts-for-social-monitoring-and-accountability/

POLICY OPTIONS AND ACTIONS

- **DO WE REQUIRE REMOTE M&E?**

Some innovations (e.g., *remote sensing, data exhaust, intelligent infrastructure, micro-narratives*) are especially useful for remote M&E in cases where access to a geographic area is restricted, e.g., in the case of a humanitarian crisis. Otherwise, more traditional M&E approaches or tools might be more cost-effective and yield similar data.

Implications

Innovations in M&E have a series of implications for institutional capacities, national processes of decision-making, and planning and implementing public policies, service delivery and programmes:

- **BUILD M&E INTO THE PLANNING PHASE**

Much more than with traditional M&E (which still often gets away with only vague statements on how M&E will be implemented in planning documents), many of the innovative approaches to M&E need to be built into the planning process of public policies, services or programmes. The current practice of tacking on M&E at the end of a plan is not sufficient for most innovative approaches, many of which require a lot of preparation (with the exception of the outcome harvesting tool, which is designed exactly to handle a situation where little thought was given to planning outcome-level M&E).

- **KEEP NATIONAL SYSTEMS FLEXIBLE**

Existing national systems need to be flexible enough to screen, pilot and scale up and absorb innovations in data collection, M&E systems. Rigid M&E frameworks and systems that are focused on budgets, activities or outputs are less likely to absorb innovative approaches to M&E. To experiment with innovations in M&E on a wider scale, governments may consider incentives for institutions to introduce new approaches to monitoring and evaluations that go beyond the existing national M&E requirements.

- **BUILD INCENTIVES INTO FEEDBACK LOOPS TO CITIZENS**

Many of the innovations discussed above will only work effectively if feedback loops to citizens, service users or programme participants are built right into the design. *Participatory statistics, mobile data collection and micro-narratives, for example, require us to give information back to people and close the loop for the approach to be sustainable in the long run. Citizen reporting is particularly dependent on fast, visible responses to information provided by a citizen or programme participant.*

- **BEEF UP INTERNAL CAPACITIES OR PARTNER WITH PRIVATE SECTOR**

The person planning for M&E does not necessarily understand innovations in ICT. Vice versa, the person developing ICT tools does not necessarily understand M&E. A key implication is that governments and organizations need to have the know-how to decide *which* ICT solutions are appropriate for their need and select the right tools for the job and the user. Especially for technological innovations, innovative M&E may require private sector national or international technical expertise or services (software for big data analysis, micro-narratives, mobile technology using SMS, sensors, etc.) *outside* government, or significant investment to increase national capacities for technological innovations.

- **GREATER EMPHASIS ON BROAD EVALUATION SKILLS**

For mastering a growing and increasingly varied tool box of methodologies and approaches for M&E, those that commission evaluations need to put greater emphasis on obtaining the right mix of evaluation skills. The rise of multi-level mixed methods requires evaluators with a good overview of different quantitative and qualitative tools. To be effective, evaluators need more than ever before to hone a variety of skills and sensitivities previously not always recognized to be relevant for evaluators.¹⁹

- **PRIVACY NEEDS HAVE TO BE MET**

As with more traditional tools and approaches for M&E, privacy needs have to be addressed. Innovative approaches typically pose more challenges with regard to privacy needs, and research and the setting of ethical standards often lag behind technological advances. It is not always clear what information private companies or telecommunication companies can share and what privacy laws mean for ICT and innovative M&E.

¹⁸ Reading: Game on! How Gamification Can Work in Government, Hackathorn, PPP, DigitalGov University, GSA, www.howto.gov/sites/default/files/how-gamification-can-work-in-government-slides.pdf

¹⁹ A recent paper on 'the art of the nudge', for example, identifies five evaluation practices that are essential: a) practising servant leadership by using an appreciative lens, listening deeply and actively, and integrating reflection into practice; b) sensing programme energy by opening channels of communication and bringing interpersonal dynamics to the surface; c) supporting common spaces by identifying observations and prioritizing interventions; d) untying knots iteratively; and e) paying attention to structure (*The Art of the Nudge: Five Practices for Development Evaluators*, Langlois/Blanchet-Cohen/Beer 2013, in: *The Canadian Journal of Programme Evaluation*, Vol. 27, No. 2, 2013, pp.39-59, www.evaluationinnovation.org/sites/default/files/Art%20of%20the%20nudge.pdf)

Additional Innovations		
INNOVATION	WHAT IT IS	FURTHER INFORMATION
PARTICIPATORY VIDEO/AUDIO	= audio or video recordings by citizens or programme participants	• <i>Insightshare</i> , www.insightshare.org
DYNAMIC RESULTS FRAMEWORKS	= makes results framework dynamic and accessible online	• <i>di Monitoring</i> , 174.122.242.131/di_monitoring.html
HUMAN SENSORS	= using phones, laptops and cars equipped with sensors to collect geographically tagged data	• <i>Future of Real-Time Information</i> , UN Global Pulse/PSFK, www.unglobalpulse.org/projects/future-real-time-report
MEASURING SOCIAL NORMS	= an attempt to better measure social norms and to track them over time	• <i>What are social norms? How are they measured?</i> , Mackie/ Moneti/Denny/Shakya; UNICEF/UCSD Center on global Justice, Working Paper, Oct 2012, www.academia.edu/2007416/What_are_social_norms_How_are_they_measured
REPUTATIONAL MONITORING DASHBOARD	= a dashboard that tracks the reputation of an institution (e.g., a government agency) over time	• <i>How to Build a Reputation Monitoring Dashboard</i> , Weintraub, 16-03-2009, AimClear, www.aimclearblog.com/2009/03/16/how-to-build-a-reputation-monitoring-dashboard/
GAMIFICATION	= the application of game mechanics, technology or design principles to motivate behaviour in M&E (e.g., participation in surveys, feedback) using different levels, leader boards or badges	• <i>Reading: Game on! How Gamification Can Work in Government</i> , Hackathorn, PPP, DigitalGov University, GSA, www.howto.gov/sites/default/files/how-gamification-can-work-in-government-slides.pdf
ALIGNMENT SCORE ANALYSIS	= a content analysis wherein narrative descriptions of organizational activities are analyzed to determine whether they support specific goals or strategies	• <i>Innovative Method to Evaluate Changes in Public Health Priorities and Activities through Alignment Scoring Analysis</i> , Lane/Mirambeau/Sullivan, AEA365, blog, aea365.org/blog/?p=6653
LOCALIZED EVIDENCE USAGE	= how local authorities and their partners are using evidence to develop strategy, prioritize spending and redesign services	• <i>Squaring the circle: Evidence at the local level</i> , Johnstone, May 2013, Alliance for Useful Evidence, www.alliance4usefulevidence.org/assets/Squaring-the-Circle-by-Derrick-Johnstone.pdf
INTENSE-PERIOD DEBRIEF	= protocol for intense periods of advocacy	• <i>Necessity Leads to Innovative Evaluation Approach and Practice</i> , Bagnell Stuart, in: The Evaluation Exchange, Volume XIII, Number 1&2, Spring 2007, www.hfrp.org/evaluation/the-evaluation-exchange/issue-archive/advocacy-and-policy-change/necessity-leads-to-innovative-evaluation-approach-and-practice

BIBLIOGRAPHY

- Adato (2008), *Integrating Survey and Ethnographic Methods to Evaluate Conditional Cash Transfer Programs*, IFPRI Discussion Paper No. 00810, October 2008, www.ifpri.org/sites/default/files/publications/ifpridp00810.pdf
- Bamberger (2012), *Introduction to Mixed Methods in Impact Evaluation*, InterAction/The Rockefeller Foundation, Impact Evaluation Notes, No.3, August 2012, [www.alnap.org/pool/files/mixed-methods-in-impact-evaluation-\(english\).pdf](http://www.alnap.org/pool/files/mixed-methods-in-impact-evaluation-(english).pdf)
- Bamberger (2013), *The Mixed Methods Approach to Evaluation*, June 2013, No. 1, Social Impact, socialimpact.com/press-releases/MME613.pdf
- Batliwala/Pittman (2010), *Capturing Change in Women's Realities: A Critical Overview of Current Monitoring & Evaluation Frameworks and Approaches*, AWID, December 2010, www.awid.org/About-AWID/AWID-News/Capturing-Change-in-Women-s-Realities
- Bengtsson/Lu/Thorson/Garfield/von Schreeb (2011), *Improved Response to Disasters and Outbreaks by Tracking Population Movements with Mobile Phone Network Data: A Post-Earthquake Geospatial Study in Haiti*, PLoS Med 8(8), www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001083
- Chambers (2007), *Who Counts? The Quiet Revolution of Participation and Numbers*, Dec 2007, Institute of Development Studies, working papers 296, www.ids.ac.uk/files/Wp296.pdf
- CLEAR (no date), *Mobile-based technology for monitoring & evaluation: A Reference Guide for Project Managers, M & E Specialists, Researchers, Donors*, www.theclearinitiative.org/mobile-based-tech.pdf
- Croke/Dabalen/Demombynes/Giugale/Hoogeveen (2013), *Collecting High-Frequency Data Using Mobile Phones: Do Timely Data Lead to Accountability?*, in: Economic Premise, The World Bank, Jan 2013, No. 202, siteresources.worldbank.org/EXTPREMNET/Resources/EP102.pdf
- Deprez/Huyghe/Maldonado (2013), *Using Sensemaker to measure the level of inclusion of smallholder farmer in Vietnam and Ecuador*, Case Study, Vredeseilanden/VECO, 02-05-2013, www.veco-ngo.org/blog/using-sensemaker-measure-learn-and-communicate-about-smallholder-farmer-inclusion
- Ebener/Murray/Tandon/Elvidge (2005), *From wealth to health: modelling the distribution of income per capita at the sub-national level using night-time light imagery*, in: International Journal of Health Geographics 2005, www.ij-healthgeographics.com/content/4/1/5
- Fagan/DeFries (2009), *Measurement and Monitoring of the World's Forests: A Review and Summary of Remote Sensing Technical Capability, 2009–2015*, Resources for the Future, www.rff.org/rff/documents/rff-rpt-measurement%20and%20monitoring.pdf
- Few (2006), *Information Dashboard Design*, O'Reilly Media, it-ebooks.info/book/1481/
- Global Pulse, FAQs, www.unglobalpulse.org/about/faqs
- Guijt/Hecklinger (2010), *Evaluating Development Initiatives through Micro-Narrative Capture and Self-Tagging in Kenya*, presentation at the American Evaluation Association Conference, November 2010, www.globalgiving.org/jcr-content/gg/landing-pages/story-tools/files/microsoft-powerpoint---makiningsenseofsensemaker.pdf
- Hackathorn (no date), *Reading: Game on! How Gamification Can Work in Government*, PPP, DigitalGov University, GSA, www.howto.gov/sites/default/files/how-gamification-can-work-in-government-slides.pdf
- Hall (2010), *Remote Sensing in Social Science Research*, in: The Open Remote Sensing Journal, 2010, 3, 1-16, www.benthamscience.com/open/tormsj/articles/V0031TORMSJ.pdf
- Hearn (2013), *A series on mixed methods in evaluation*, Better Evaluation Blog, Week 31, betterevaluation.org/blog/mixed_methods_part1
- Holland (ed.) (2013), *Who Counts? The Power of Participatory Statistics*, Practical Action Publishing 2013
- Hummelbrunner/Jones (2013), *A guide for planning and strategy development in the face of complexity*, ODI Background Note, March 2013, www.odi.org.uk/publications/7325-aid-development-planning-strategy-complexity
- Johnstone (2013), *Squaring the circle: Evidence at the local level*, May 2013, Alliance for Useful Evidence, www.alliance4usefulevidence.org/assets/Squaring-the-Circle-by-Derrick-Johnstone.pdf
- Jung (2011), *Mobile Data Collection Systems: A review of the current state of the field*, NOMAD, humanitarian-nomad.org/wp-content/uploads/2013/03/NOMAD-MDC-Research.pdf
- Lane/Mirambeau/Sullivan (2012), *Innovative Method to Evaluate Changes in Public Health Priorities and Activities through Alignment Scoring Analysis*, AEA365, blog, June 2012, aea365.org/blog/?p=6653
- Langlois/Blanchet-Cohen/Beer (2013), *The Art of the Nudge: Five Practices for Development Evaluators*, in: The Canadian Journal of Programme Evaluation, Vol. 27, No. 2, 2013, pp.39-59, www.evaluationinnovation.org/sites/default/files/Art%20of%20the%20nudge.pdf
- Mackie/Monet/Denny/Shakya (2012), *What are social norms? How are they measured?*, UNICEF/UCSD Center on global Justice, Working Paper, Oct 2012, www.academia.edu/2007416/What_are_social_norms_How_are_they_measured
- Martinez/Frias-Martinez (2012), *Enhancing Public Policy Decision Making using Large-Scale Cell Phone Data*, blog, Sept. 2012, www.unglobalpulse.org/publicpolicyandcellphonedata
- Maxson (2012), *The "Real Book" for story evaluation methods*, GlobalGiving Foundation, May 2012, chewychunks.files.wordpress.com/2012/05/storytelling-realbook-may-23-2012.pdf
- Meier (2011), *Changing the World, One Map at a Time*, video, in: re:publica 2011, www.youtube.com/watch?v=Hh_PiVqf8BA
- Mertens/Hesse-Biber (ed.) (2013), *Special Issue: Mixed Methods and Credibility of Evidence in Evaluation*, in: New Directions for Evaluation, Summer 2013, Issue 138, pp. 1–119, onlinelibrary.wiley.com/doi/10.1002/lev.v2013.138/issuetoc
- Pradel/Cole/Prain (2013), *Mixing methods for rich and meaningful insight: Evaluating changes in an agricultural intervention project in the Central Andes*, June 2013, BetterEvaluation, betterevaluation.org/sites/default/files/Mixing%20Methods%20for%20Rich%20and%20Meaningful%20Insight.pdf
- Quaggitto (2013), *Innovation for development: what is really different?*, Voices from Eurasia blog, UNDP, 18-03-2013, europeandcis.undp.org/blog/2013/03/18/innovation-for-development-what-is-really-different/
- Radojevic (2013), *Storytelling: The challenge of collection*, Knowledge and Innovation Team, UNDP Regional Center in Bratislava, Voices from Eurasia, blog, 27-06-2013, europeandcis.undp.org/blog/2013/06/27/storytelling-the-challenge-of-collection/

BIBLIOGRAPHY

- Raftree (2012a), *ICTs and M&E at the South Asia Evaluators' Conclave*, in: Wait... What?, blog, 12-03-2012, lindaraftree.com/2013/03/12/icts-and-me-at-the-south-asia-evaluators-conclave/
- Raftree (2012b), *12 tips on using ICTs for social monitoring and accountability*, in: Wait... What?, blog, 09-08-2012, lindaraftree.com/2012/08/09/tips-on-using-icts-for-social-monitoring-and-accountability/
- Raftree (2013a), *Benefits, barriers and tips for ICT-enabled M&E*, in: Wait... What?, 17-04-2013, lindaraftree.com/2013/04/17/benefits-barriers-and-tips-for-ict-enabled-me/
- Raftree (2013b), *Using Technology for Development Project Monitoring & Evaluation: An Interview with Linda Raftree*, 02-07-2013, bestict4d.wordpress.com/2013/07/02/using-technology-for-development-project-monitoring-evaluation-an-interview-with-linda-raftree/
- Rassmann/Smith/Mauremootoo/Wilson-Grau (2012), *Retrospective 'Outcome Harvesting': Generating robust insights about a global voluntary environmental network*, April 2012, betterevaluation.org/sites/default/files/Retrospective%20outcome%20harvesting.pdf
- Roche/Kelly (2011), *Innovations in Monitoring and Evaluation 'as if Politics Mattered'*, Concept Note, 04-08-2011, mande.co.uk/2011/coming-events/conferences/innovations-in-monitoring-and-evaluation-as-if-politics-mattered/
- Rogawski (2013), *Crowdsourcing in Local Government*, Local Gov 3.0, 04/08/2013, gov30.typepad.com/local/2013/04/parallel-to-changes-on-the-federal-level-social-media-is-rapidly-altering-how-citizens-interact-with-their-local-gover.html
- Stikeleather (2013), *Six Fundamental Truths About Innovation*, blog, Management Innovation eXchange, 28-02-2013, www.managementexchange.com/blog/six-fundamental-truths-about-innovation
- Stuart (2007), *Necessity Leads to Innovative Evaluation Approach and Practice*, in: The Evaluation Exchange, Volume XIII, Number 1&2, Spring 2007, www.hfrp.org/evaluation/the-evaluation-exchange/issue-archive/advocacy-and-policy-change/necessity-leads-to-innovative-evaluation-approach-and-practice
- Taubenböck/Esch (2011), *Remote Sensing – An Effective Data Source for Urban Monitoring*, in: earthzine, www.earthzine.org/2011/07/20/remote-sensing---an-effective-data-source-for-urban-monitoring/
- The World Bank (2007), *More than a Pretty Picture: Using Poverty Maps to Design Better Policies and Interventions*, siteresources.worldbank.org/INTPGI/Resources/342674-1092157888460/493860-1192739384563/More_Than_a_Pretty_Picture_ebook.pdf
- Thomas (2012), *Measuring Sustainability*, in: Solutions, August 2012, www.thesolutionsjournal.com/node/1138
- UN Global Pulse/PSFK (2011), *Future of Real-Time Information*, October 2011, www.unglobalpulse.org/projects/future-real-time-report
- UNDP (2012), *Answering Calls for Integrative Capacity Development for Sustainable Development, Group 3: Monitoring and Evaluating Sustainable Development Results: Flexible, Nimble and Dynamic Approaches*, 15/17-10-2012, Bratislava, Slovakia, draft
- Weintraub (2009), *How to Build a Reputation Monitoring Dashboard*, 16-03-2009, AimClear, www.aimclearblog.com/2009/03/16/how-to-build-a-reputation-monitoring-dashboard/
- Welch/Mohan (2013), *Bryon Welch and Rakesh Mohan on Interactive Presentation of Evaluation Reports*, AEA365, A Tip-a-Day by and for Evaluators, American Evaluation Association, July 2013, aea365.org/blog/?tag=data-visualization
- Wilson-Grau (2012), *Outcome Harvesting*, PPP, OM Lab 2012, Beirut, Lebanon, 09-02-2012, www.outcomemapping.ca/resource/resource.php?id=363
- Wilson-Grau/Britt (2012), *Outcome Harvesting*, www.outcomemapping.ca/resource/resource.php?id=374

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