

Submission to IPART
CelsiusPro (Australia) Pty Ltd
Lumley House
309 Kent Street
SYDNEY NSW 2000

www.celsiuspro.com

By Jonathan Barratt

B.Ec Hon, M.EC, GradDipCorp Law

CEO CelsiusPro(Aust) Pty Ltd

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Submission:

The NSW Government has expressed an interest in the potential for multi-peril crop insurance (MPCI) to increase farmers' resilience and preparedness for drought, and reduce their reliance on government assistance.

It has asked IPART to evaluate several measures designed to increase the uptake of MPCI. Below are observations made by CelsiusPro (Aust) Pty Ltd. CelsiusPro was founded in early 2008 and is specialized in structuring and originating tailored index solutions to mitigate the effects of adverse weather, climate change and natural catastrophes. By applying its index logic, CelsiusPro analyses big data to design insurance products. CelsiusPro's technology enables smart climate insurance and enhances climate smart behavior. By reducing distribution, claims and administration cost lower premiums are achieved.

Measures designed to increase the up take of MPCI:

1) **the Farm Business Skills Professional Development program, which provides financial assistance for farm business planning;**

The Federal Government has the Managing Farm Risk Program (MFRP) \$20.2 million over 4 years and the NSW Government has the Farms Business Skills Professional Development Program (FBSPD) which offers \$45 million over 5 years. These rebates are for approved courses that are under taken by the farmer via an approved provider. Our own evidence and experiences, in particularly with our projects in Africa suggests that in order to shift drought or for that matter any adverse risk from the government to the market successfully, both the insured/growers and the insurance communities need to be motivated not the educators. By default, if you can motivate these two bodies the cost of adverse weather shifts from the Governments balance sheet/public purse into the market where it should belong.

Motivating the grower through the FBSPD rebates we feel needs to be "tweaked" in order for it to get better traction. We are of the opinion that insurance education should be done by a certified issuer of the product who has a real ongoing market incentive to look after his client rather than a temporary incentive via a rebate to educators. Education for the grower should be ongoing as structures change to meet seasonal needs. Further, insurance products such as index insurance/derivatives and MPCI are outlined within a legal framework already ie, a Product Disclosure Document provided to the grower by the issuer. Licensing to offer these products falls under the governance of the Corporations Act, which is policed by ASIC. As such it is our opinion that education should be done by the issuer and not a third party with a different motivation. The insurance community is easy to motivate as this is done through traction in the education they offer

which results in more sales, then more market participants which ultimately reduces premium values of the insurance to the end user.

Over all, some of the comments we are hearing concerning single and multi peril insurances are that growers are unaware of the full extent of insurance options offered, they do not have significant training in them and many simply do not have the resources to buy it when it is most needed (for MPCCI \$55,000 is a lot of money in any language). We understand and applaud the States initiatives and measures to help disseminate information about single/multi peril crop insurance, however, we feel the current FBSPD measures need to be revisited in order to achieve greater penetration (see below question 4 re subsidies).

Concerning single peril/index insurance/derivatives there are three aspects we find that are particularly taxing and which are impeding its dissemination throughout the market. The first is that educators themselves are not educated enough to educate growers in these products. This aspect fails to properly workshop growers in order to bring them up to speed with all the insurance options. Further, this means that rebates may not be having the desired effect as they are missing an element of education (single peril). Secondly, although we enjoy an organic growth in policies issued and in awareness, we could achieve more in the field if resourced better. The costs become an issue. We feel that by subsidising our regional workshops we could attain greater distribution as we could put more people on the ground to educate. A solution in this case may be for the issuer to apply for the rebate not the grower. Finally, where MPCCI products are issued growers are getting confused as in there current form the multiply peril approach insures them for events that are covered in a single form from us. We believe when compared to index based cover MPCCI needs more work done on them in order to be competitive. (see below MPCCI Issues).

We are however finding that when growers do understand index insurance and how it can assist them they use the cover, as it is focused to their needs for the season, fits their budget and risk profile, can be back tested and due to the varying premiums can be used only when they require it. Unlike MPCCI, which in our opinion is inflexible and due to its cost promotes a “fear of missing out” mentality. Parametric/Index Insurance in Australia is relatively new, however issuance of the cover to growers is up 140% on last year. We feel this is more of a viable insurance option that should be included in any program.

2) improved information for insurers and farmers, through:

a. *installing additional rain gauges and weather stations:*

We feel that installing automated weather stations can only enhance the ability of the BOM to be able to offer more credible data sets. Index Insurance relies on data from weather stations and satellites. The Government acknowledges weather as a major contributing factor to the success of any farming operation. Anecdotally 70-80% of risk in farming has to

do with the reliability of the weather. We feel more focus on insurances that provide cover against adverse weather should be an additional focus as it is already proven in the field. The basis for index insurances is found in the use of “big data” provide by organisations such as the BOM. Gridded/Interpolated data for index insurance in Australia relies on readings from automated weather stations and satellites. These data sets are then used to structure parametric/index insurance so it is imperative that accurate data is provided. More readings the BOM have the more robust the data will be which leads to better priced index insurance structures. As an observation we are finding that individual farmer groups are putting in their own automated stations, this data could also be used to help to gather more readings.

Further, weather basis risk used to be an issue for index insurance providers in Australia. The advent of more weather stations reduces this risk. It was an impediment to the growth of index insurance in Australia due to the size of the country. However, with the advent of gridded/ interpolated data it has been resolved. Testimony to this was in the numbers of issued parametric/index policies that occurred in the first year of its offering structures using interpolated data sets.

However, it should be noted that the future of index insurance is not necessarily tied to ground data ie weather stations. In Kenya, for instance we used remotely sensed data from a satellite provided by NASA to build the “Normalised Difference Vegetation Index (NDVI) for the region in question. This index was used as a proxy against drought and heat. It provided the “best fit” proxy for consortium to combat drought. The Kenyan Livestock Insurance Program (KLIP) was formed with the NDVI as the basis for the insurance. The data was provided by NASA.

b. sharing NSW Rural Assistance Authority data with the insurance industry:

Any data is good data, however we prefer this data remain with the Authority for the following reasons:

- i. It is an invasion of privacy. If customers want to disclose data to the insurer then it is up to them,
- ii. It may expose farm practises that may see an additional risk premium added,

- iii. For parametric/index insurance it is not needed, as cover is against the weather not the individual.

3) waiving the stamp duty on MPCl policies,

Reducing any costs to the end user is always positive. However, other direct costs such as GST need also to be considered as it detracts from the viability of the cover. If all the ancillary costs are added to the actual cost of a MPCl cover then approximately 62% of the cover is actually risk premium. In NSW the ancillary costs of stamp duty and GST add an additional 12.5% to the cost to the grower. In other states it can be much higher ie 20% in some cases. We feel that any wavering needs to be addressed as a “bundle”.

4) a subsidy to reduce the upfront cost of MPCl premiums.

Generally, we feel that subsidies when used correctly work given the reasons/value proposition for the subsidiary and the way it is offered and disseminated down the food chain. The value proposition needs to be real. The last two Governmental projects in Africa we conducted provided interesting insights as to the workings of a subsidy in the market. One was fully subsidised and the other not subsidised. We drew different conclusions and parallels that are worth mentioning; however subsidising the premiums enabled more policies to be issued, resulting in a greater efficiency for the risk transfer mechanism:

- 1) **Subsidised** - In Kenya the program offered encompassed 26 different regions, was 100% subsidised by the Government/Donor Institutions (World Bank) and in the first year covered 5012 producers. The program has been extended. The subsidiary is seen as providing a stop loss by the government in case the drought situation extends itself. The income via the insurance if a trigger event occurs filters through to the grower enabling resources for him to start again. It keeps him on the land. The insurance receipt goes towards balancing the government books in times of peril, as it is an injection of funds into the economy financed via the insurance and keeping the country on the development path. Experience gained through the failure of the Government in Nepal to take catastrophe cover in an earthquake zone looks to have stalled the development of the country as it needs to sink between \$5billion and \$10billion into reconstruction. 80% of the Funds will come from developed countries. Simple “cat” cover would have avoided this.
- 2) **Non-Subsidised** – In Ethiopia the program offered encompassed 15 regions, was not subsidised and 1300 farmers purchased the insurance in the first season. It was extended for a further year, however was disbanded two years after due to positive seasonal shifts. In hindsight the program should have been continued as in the third year the region suffered from server drought. Our take home was that it probably would not have been suspended if

more took up the cover and the only way to do this would have been to lower the cost of entry ie the premium via a subsidiary.

Offering a subsidy in Kenya sent important messages to all stakeholders. The **World Bank** saw the Kenyan project as less risky; this was seen as an opportunity to increase the level of donations. The **Kenyan Government** saw this as a direct correlation between drought/economic development and the need to transfer this risk to the market. Also, the subsidy introduced the cover to the producer as a viable insurance tool for them to use. There was a base line cover that the Government funded and if needed the producer could opt in for more. The **Insurance** distributors saw value with the subsidies as it meant they were incentivised and finally the **Producer** could see its value as not only could he adapt more aggressive agricultural programs he understood that a floor was in place should a drought occur that would under write the cost of inputs to help finance a new start.

Although, Australia is a developed nation we feel there are valuable lessons learnt from Africa, such as how to structure policies, how to subsidize them and how to disseminate insurance to the end users. What was unique to the projects was the way the index insurance policies were structured, to fit in with the seasons (the Normalised Difference Vegetation Index (NDVI) for Kenya and rainfall deficit index for Ethiopia) and the way the offering was then disseminated through intermediaries within the regions to the end user in order to have the desired outcome of transferring adverse weather risk to the market. In our opinion, in Australia, we have similar structures but they just need to be tweaked in order to make an important beachhead. We have found that well structured options sell themselves. Over 6000 policies in both Kenya and Ethiopia have been issued to subsistence farmers and producers, most were subsidised, so we have a good understanding on what works and have learnt from experience. **We feel that direct subsidies have a better chance of achieving the desired outcome**, however we feel strongly that they should be structured in a way to avoid talisman issues such as those engulfing the US Crop insurance program. The cost to the U.S. government of its crop insurance program has increased from \$3.3 billion in 2000-2004 to \$8.6 billion in 2010-2014. This needs to be avoided. If a direct subsidiary were involved we would suggest the following solution and see it working in the following manner:

Our solution would be to enhance the current program by making it optional for the grower to either look at the educational rebate or look to have it as a direct subsidy for “x” period that goes against the premium for the cover. Further to extend the rebate to the product issuer to help with regional workshops to help cover costs and put more focused workshops in the field.

We do feel that if the grower is to receive a subsidy that it should not be a bare subsidy like in the US. We feel that in order for the grower to qualify for the subsidy just like for the FBSPD he needs to show that he has:

- 1) Taken up some education from an approved educational course offered by a certified issuer of an Index Insurance or a MPCl product,
- 2) Provides yield/statistical data or like for their property so that regional yield maps/other can be reconfigured again. A future benefit re data collection points and the aids the development of yield maps for yield insurances in the future.
- 3) Provide a copy of currency of a policy or evidence of a rejected policy from an approved provider for the Index Insurance or MPCl cover in order to receive the subsidiary.

If a grower ticks all the boxes they get the subsidy of \$2500, which is the same cost as the educational rebate. This subsidy if used against the premium could be used for base line cover similar to the KLIP in Kenya. The grower can top up if needed or warranted at his own expense. The government feels the impact immediately if adverse weather occurs and the growers have first hand experience on index insurance. For example if the grower looked at an index insurance option for drought for a season ie a sum insured of \$100,000 where the premium is say \$5000 the FBSPD subsidy of 50% reduces the cost of the cover by \$2500 with the subsidiary or 2.5% rol which is affordable. Extrapolating this through out the full grant provides for \$1,800,000,000 worth of relief cover should growers take up the subsidiary and apply it to an index insurance option similar to the example. This is an affordable premium that does most of the heavy lifting when extreme drought occurs. Any cost in such a situation of a full payout is recovered from the market and not the government/public purse. A “cost burn” analysis will show the probability of this occurring and payouts to growers due in the 5 lowest years of rainfall in last 25years.

Overview of MPCl in its current form:

It is our global experience that MPCl policies in their current form create more issues than solutions. There is a need for change. Testimony in our experience lies in the global awards we have received and our experience in formulating drought resistant programs in Kenya, Ethiopia, India and the Ukraine. Our clients are Governments, Banks, Re Insurers, Fund Managers and Individuals.

CelsiusPro was founded in early 2008 and is specialized in structuring and originating tailored index solutions to mitigate the effects of adverse weather, climate change and natural catastrophes. By applying its index logic, CelsiusPro analyses big data to design insurance products. CelsiusPro’s technology enables

smart climate insurance and enhances climate smart behavior. By reducing distribution, claims and administration cost lower premiums are achieved.

Our recent projects include:

- 1 Kenyan Livestock Insurance Program (KLIP), which is a parametric index insurance program for the World Bank and Kenyan Government. The basis of the covers surrounded drought and heat. This was covered using the NDVI.
- 2 The Rural Resilience Enhancement Project was a parametric index insurance program based around lack of rainfall for the Ethiopian Government and Japanese International Cooperation Agency.
- 3 The Climate Insurance Fund where we are Technical and Fund Advisors to the fund. The German Government put this Fund together. The aim is to promote climate smart insurance programs in developing countries.

Adverse weather accounts for 70-80% of the inputs. Too much rain or lack thereof is the primary cause of failed crops resulting in reduced revenue for the growers and thus the region. Parametric/Index Insurances covers this risk and is totally transparent. Policies are set 20 days prior to the event and paid out 20day after the event. They can also be back tested for relevance.

We feel that crop related insurances should be flexible, accountable, suit the season and risk/budgets for all and not just wealthy growers. Everyone is different so off the shelf polices we feel fail to meet these needs.

In our opinion these are the top 10 issues with the current form of MPCl contracts:

- 1 Premiums are too costly and favour wealthy growers,
- 2 Setting up the premise for the cover is too expensive – additional costs should be borne by the insurer,
- 3 Fear of Missing Out (FOMO)– sends misinformation about the reasons for the cover,
- 4 Limited crop cover ie broad acre only wheat – an insurance offering needs to cover all farming activities,
- 5 Concentration risk from re insurers,
- 6 Damage needs to be assessed ie claims need to be submitted,
- 7 Payouts need to be made at crucial times – in 20days after the event,
- 8 Coverage should be via a region not per farm – it should be generic to the varying crops,

- 9 Premiums should reflect the risk and probability of payouts,
- 10 Technology should be used to lower premium costs.

CelsiusPro is more than happy to expand on any of the above.

We thank IPART for giving us the opportunity to express the above thoughts.

As a side we feel establishing a Primary Industry Bank of Australia style of facility but focused on Insurance would be more worthwhile to all stakeholders. We have an existing pool of funds, which can be managed to issue insurance to the primary sector in a similar manner to a Reinsurer. This way all profits go back to Australians, premiums can be reduced and claims can be paid.

We would be prepared to help in a capacity if required.

Yours faithfully



Jonathan Barratt BEc (Hons), M Ec, GradDip Corp Law
CEO CelsiusPro



Overview of CelsiusPro:

Natural catastrophes and severe weather cause significant losses. We help to insure from losses due to climate variability and natural perils. We provide parametric risk management and transfer solutions for climate risk and natural perils.

Our bespoke platform based solutions are for corporations, insurers, brokers, governmental agencies, industry bodies, NGOs, cooperations, agriculture companies and micro insurers.

Capabilities

1 Who we are?

CelsiusPro was established in 2008 to meet the growing needs of corporations looking to hedge their income and balances sheets against the effects of adverse weather.

Our Management Team are specialists in parametric weather cover and bring relevant “know how” to any discussion on climate change and how adverse weather effects incomes and balance sheets. The length and breadth of our experiences suggest that we are industry “go to” persons corporations, NGOs and governments look to for advice.

Testimony to this lies in the industry achievement awards we have received. In 2008 we won the Swiss and in 2014 we became a Finalist in ANZIIF then later went on to win the Award.

CelsiusPro is based in Zurich, Switzerland and in Sydney, Australia.

2 What we do?

CelsiusPro provides the full value chain from risk analysis, product design, pricing, risk transfer, reporting and settlement. Our White Label offering of our fully automated platform allows insurance companies, governmental agencies, cooperatives and aggregators to efficiently cater for large-scale product distribution and management. For agriculture clients we offer bespoke solutions to mitigate risks and enhance yield.

Risk Analysis & Solution Design

CelsiusPro provides risk analysis, product structuring and solution design services covering the entire value chain. Our proprietary technology platform allows large-scale scenario analysis and modeling to efficiently deliver suitable solutions.

Pricing, Risk Transfer

CelsiusPro links demand and supply in the index based risk transfer market. We provide one-off and automated pricing and risk transfer to reinsurers and alternative markets. Our extensive experience in pricing and execution of index products, including our network with risk takers allow for best execution for our clients.

Distribution Solutions

CelsiusPro’s technology platform caters for large-scale product distribution. The flexible White Label Solution allows insurance companies and other aggregators to customize the distribution platform in line with their specific distribution set-up including web and mobile based distribution of information and products.

Micro Insurance

CelsiusPro covers the entire value chain from feasibility study, data sourcing, marketing support, education services, setting up pilot schemes and industrializing schemes for scale-up. Our platform enables local insurers to offer relevant index products at low cost and short time to market.

Agriculture

Our technology, expertise and knowledge enables us to provide climate smart insurance and enhance climate smart behavior helping the farming community to achieve complementary goals: yield optimization and wealth protection.

3 Our Partners

Our Partners take advantage of our know-how and state of the art platform to offer clients solutions to help mitigate their financial risks due to climate change and natural perils.

Insurer

Our White Label Solution provides insurers access to automated pricing, execution, settlement and reporting platform to offer its clients Weather and Nat Cat covers. Our platform allows cedent companies to price and write insurance policies online. Reinsurance risk transfer can be automated on a quota share or on a case-by-case basis.

Re-Insurance

CelsiusPro collaborates with re-insurers and alternative markets, allowing for best execution.

Broker

CelsiusPro brings solutions to individual broker requests. We link brokers with a strategic interest in weather and Nat Cat risk with insurers for a platform based distribution partnership including MGA set-ups.

Governmental Agencies & Cooperatives

CelsiusPro provides risk analysis and solution design to cooperatives and governmental agencies including micro index solutions, countrywide covers against risks from climate change and other natural hazards. Complementary we offer technology based tactical advice for farmers as well as natural catastrophe warnings.

Agricultural Companies

CelsiusPro provides bespoke analysis and solutions for participants in the agricultural space such as producers, insurers, input companies, traders and supply chain managers. The solutions range from risk analysis, product structuring, pricing, distribution solutions and risk transfer.

For more information please do not hesitate to call or email.

