In this ISSUE

- Dear PACA Community Members (Message) .................................................. 2
- African Union Commission receives support for PACA Phase II ................. 3
- Uganda Fights Aflatoxin .............................................................................. 4
- Malawi Engages Development Partners to Fund Aflatoxins Mitigation ........ 5
- Thumps Up! Committee for Mycotoxin Control in Tanzania .................... 6
- AfricaAIMS in Nigeria ................................................................................. 6
- Combating Aflatoxins in the Maize Value Chain: Upcoming Workshop ....... 7
- New Project on Aflasafe Offers Relief to African Farmers ......................... 8
- Sahel Countries endorse Aflasafe ............................................................... 9
- CODEX-Ensuring food Safety in Africa ...................................................... 10
- Aflatoxin Deliberated at 1st All Africa Postharvest Congress and Exhibition 11
- PACA Steering Committee Discusses Strategic Issues .......................... 12
We are pleased to present this issue of your newsletter with important updates and information. The Newsletter has further evolved and it will be issued at the end of each calendar quarter.

The PACA Steering Committee (SC) continues to provide multi-sectoral leadership to PACA Secretariat. It held its 10th Meeting early March in Maputo, Mozambique and provided important guidance as outlined in this issue. I particularly note SC’s guidance to document how the work of PACA, as one of the pioneers of government-led and stakeholder-aligned approaches for solving complex problems, spurs government action. You will also read important updates from PACA pilot countries and key aflatoxin control events in Africa.

You may recall that I reported about the Secretariat’s continued effort, with guidance from the PACA Steering Committee and AUC, to build its capacity to effectively support continental, regional and country level activities. I am pleased to welcome and introduce to the PACA Community PACA Technical Advisor, Dr. Martin Kimanya. I take this moment to heartily thank the former Technical Advisor, Dr. Chibundu Ezekiel, for his dedication and able support to the PACA Secretariat during his short-term engagement for about 1 year.

Importantly, we gratefully report in this issue about the support AUC has received for the next phase of PACA, December 2016-November 2020

Thank you for your support to aflatoxin control in Africa.

Amare Ayalew (PhD)
Program Manager, PACA, AUC
African Union Commission receives support for PACA Phase II and calls upon partners to join hands in the fight against the vexing aflatoxin challenge

PACA Phase II, 2016 – 2020 will be continuing the momentum of the first phase of PACA which came to an end in November 2016. The scope and approaches of Phase II were described in the Special PPM Issue of the PACA Newsletter August - October 2016. The team at the PACA Secretariat and the Country Offices is fully staffed and poised to implement the full complement of activities towards achieving the four targets that drive systemic change, beyond fragmented and scattered efforts. These targets include, establishing a strong knowledge base, safeguarding implementation sustainability through country programs and adoption of technologies, ensuring scaling and replicability, and ensuring financial sustainability.

To achieve systemic changes that sustainably mitigate the harmful effects of aflatoxin in Africa, the AU Commission has received a US$ 4 million grant from the Bill & Melinda Gates Foundation. This grant will support PACA’s work through November 2020. The grant has come at a time when activities are at a critical stage of implementation, especially in safeguarding sustainability of country activities. The Bill & Melinda Gates Foundation grant provides 39% of the US$ 10,277,877 comprehensive project for PACA Phase II. The PACA team together with partners are already working on raising funding to match the Bill & Melinda Gates Foundation grant and fulfill the scope of the second Phase. The results registered over the last three years by PACA, AUC’s leadership and commitment as well as the clear strategy and ambitious yet realistic targets of the PACA Secretariat are expected to garner further support. We take this opportunity to thank the Meridian Institute, the Phase I grant administrator, for the dedication, capacity building and implementation support provided.

We also gratefully acknowledge the support from Mars, Incorporated to partly finance, in 2017, the meta-analysis of aflatoxin situation in Africa and training of trainers for extension agents embedding aflatoxin control. These activities form part of the implementation of the Memorandum of Understanding signed between AU Commission and Mars, Inc. to share food safety resources and expertise to control aflatoxins in food crops, recognizing aflatoxins as a significant threat to food safety in Africa and a major deterrent to the use of key African raw materials in global supply chains. Mars, Inc. and AUC have embarked on implementation of the MOU with a focus on evidence use and improvements in the safety and quality of supply chains.

Dr. Godfrey Bahiigwa, the Director of Rural Economy and Agriculture Department of the AU Commission and Chair of the PACA Steering Committee stated “Africa should effectively address the aflatoxin challenge to ensure competitiveness of its agriculture sector and safeguard the health of its people. Aflatoxin contamination undermines realization of key continental and global commitments, particularly those related to nutrition and food security and boosting trade. While PACA’s achievements so far and the support of our core partners are commendable, a lot needs to be done to make a difference at the grassroots level. AUC welcomes the support of new partners and supporters to Phase II, especially towards implementation of country activities and programs such as support to surveillance and food safety control capacity building, policy review and harmonization, user adoption of country-adapted technologies as well as public awareness.”
Uganda was among the first countries in the world where aflatoxins and attendant primary liver cancer studies were carried out following the discovery of aflatoxins. In 1967, one of the earliest cases was reported...


President Yoweri Museveni while officially opening the 2nd Partnership Platform Meeting of the Partnership for Aflatoxin Control in Africa (PACA) in Entebbe, Uganda in October 2016 echoed the sentiments of many when he among others called on the stakeholders to be more proactive and find solutions to the challenges posed by Aflatoxin.

With such a challenge, Uganda has taken the initiative to ensure that the menace of aflatoxins is mitigated in the country.

This included undertaking a country situation analyses on aflatoxin with the support of PACA-AU, which led to the development of a National Aflatoxin Control Action Plan (NACAP) with the active participation of stakeholders in November 2016.

A follow up stakeholders’ meeting was held on March 7, to identify how the Country Plan of Action for aflatoxins mitigation will be operationalized.

Ms. Grace Akao, PACA country officer for Uganda indicated that the meeting concluded with a number of commitments, including the national agriculture training institutions being encouraged to incorporate aflatoxins mitigation in their curriculum. She mentioned the pledge by stakeholders to develop fundable proposals on aflatoxins mitigation.

She said it was agreed at the meeting that Members of Parliament of Uganda will be engaged as a matter of urgency to develop and fast-track the relevant legislations and policies on aflatoxin.

Ms. Akao further stated that the meeting agreed that the PACA Office in Uganda will engage and support the Ministry of Health (MoH) to quickly make their input into the Country Plan of Action.
Malawi Engages Development Partners to Fund Aflatoxins Mitigation

Malawi is a landlocked country, whose population relies on subsistence farming. The main food crops are maize and Groundnuts and employ about 700,000 farmers. These crops are susceptible to aflatoxin contamination with adverse economic and health implications on the population.

Malawi continues to lose its export market share for groundnuts since the 1980s due to high levels of aflatoxin contamination. A study “Impact of Aflatoxin Contamination on Groundnut Exports in Malawi” by Babu, S.C et al. and published in the African Crop Science Journal, Vol. 2, No. 2, 1994, pp. 215-220 confirms this assertion. There have also been reports of high incidence of stunted growth among children, which can partially be attributed to the consumption of aflatoxin contaminated staples like maize.

In 2012 the Government and stakeholders developed the Malawi Program for Aflatoxin Control (MAPAC) to help address these challenges and that received positive responses from stakeholders.

Nonetheless, the provision of required resources to support the MAPAC has been lower than anticipated. Therefore, the Malawi government through the technical assistance of the Partnership for Aflatoxin Control in Africa (PACA), has been engaging donors for support.

One such meeting was the quarterly Donors Committee Meeting on Agriculture and Food Security (DCAFS) held on 23rd March 2017. The DCAFS comprise of Development Partners and major stakeholders in the agricultural sector in Malawi.

Mr. Mphatso Dakamau, PACA Country Officer for Malawi elaborated at the meeting that aflatoxins could undermine the economic goals of Malawi as stipulated in the Malawi Growth and Development Strategy because of its adverse effect on major exports like the oil seed sector (Groundnuts).

Mr Dakamau said $3.6 million was required to implement the 3 years plan of action for aflatoxin mitigation and control under the MAPAC.

He mentioned the priority areas under the plan of action as: (i) Public awareness, advocacy, and consumer education; (ii) Coordination and partnerships at national level; (iii) Identifying and promoting good agricultural practices (GAP) to control aflatoxin; and (iv) Enhancing capacity in testing and Standards, and integrating aflatoxin in policies.

Harvesting groundnuts, mainstay of women in Malawi. Credit: AFP
Thumps Up! Committee for Mycotoxin Control in Tanzania

The National Steering Committee for Mycotoxin Control in Tanzania has ended a three year tenure with “a pat on the back”.

Mr. Raymond Wigenge, the Director of Food Safety Directorate of the Tanzania Food and Drug Authority (TFDA) gave the commendation on behalf of the Director General of TFDA at the last meeting of the Committee in February 2017.

The committee, established in February 2014 spearheaded a multi-sectoral approach in management of mycotoxins in foods. It comprised of members from various sectors including agriculture, health, trade, academia, research, farmers and the private sector.

The committee was hosted by the TFDA which is under the Ministry of Health, Community development, Gender, Elderly and Children. Some of the achievements of the committee include the following:

- Improved cooperation and information sharing among stakeholders in public and private sectors of health, trade and agriculture;
- Raised awareness among stakeholders in public and private sectors of health, trade and agriculture about the importance of mycotoxins in food security, trade and health;
- Increased allocation of resources for mycotoxin activities by TFDA. TFDA included activities for mycotoxin surveillance and public awareness raising in their annual budget;
- Integration of mycotoxin mitigation strategies in the Tanzania National Agricultural Sector Plan (ASDP II) through which the Tanzania Agriculture and Food Security Investment Plan (TAFSIP) is implemented;
- Increased efforts to mobilize resources for mycotoxin mitigation including the application for funds from Global Agriculture and Food Security Program (GAFSP);
- Improved knowledge and support (among stakeholders) for biocontrol as a potential technology for prevention of aflatoxins contamination in food;
- Smooth running and timely completion of the PACA supported National Aflatoxin Situation Analysis and Action Planning;

Dr Happy Magoha, PACA Country Officer for Tanzania described the work of the committee as very commendable, which will go a long way to support aflatoxin mitigation in the country.

Dr Martin Kimanya, Technical advisor to PACA –AU, who chaired the committee before his appointment to PACA, expressed the hope that members of the committee will serve another term with excellent contribution to the work of the committee.

AfricaAims in Nigeria

The Partnership for Aflatoxin Control in Africa (PACA) established a knowledge portal called Africa Aflatoxin Information Management System (AfricaAIMS) in 2014 to facilitate evidence and knowledge generation of aflatoxin in the continent.

AfricaAims intends to empower countries to participate in evidence generation. This includes collection and analysis of prevalence data on the levels of contamination and the associated impact on trade and health risks.

It will also afford countries access to aflatoxin occurrence data in food and feed; patterns of consumption of food and feed; exposure in humans and animals; associated diseases; and rejections of food exports and imports.

Since February 2016, data from five PACA pilot countries has been submitted on to the system. The countries include Malawi, Tanzania, Uganda, Senegal and The Gambia.

Nigeria is the latest pilot country to participate in AfricaAIMS. A training workshop was held from March 14-17, 2017 in Abuja, Nigeria for 30 participants to equip them with the necessary skills and knowledge to enable them to make the system functional.

The participants were selected from various ministries; Agriculture, Health and Trade, as well as other public agencies such as The Standard Organization of Nigeria and Nigeria Export Promotion Council, among others.

Also present were participants from Malawi, Uganda Tanzania, Senegal, and The Gambia to update their knowledge on the AfricaAIMS.
Maize is one of the major staple food crops grown in diverse agro-ecological zones and farming systems, and consumed by people with varying food preferences and socio-economic backgrounds in sub-Saharan Africa (SSA).

A paper “Cereal Crops: Rice, Maize, Millet, Sorghum, Wheat” by Dr Harold Macaley, Director General of Africa Rice indicated that an estimated 208 million people in SSA depend on maize as a source of food security and economic wellbeing; out of the 22 countries in the world where maize forms the highest percentage of calorie intake in the national diet, 16 are in Africa. Maize accounts for almost half of the calories and protein consumed in Eastern and Southern Africa, and one-fifth of the calories and protein consumed in West Africa.

Yet it is one of the most susceptible crops to aflatoxin contamination. The PACA Secretariat is therefore planning to partner with key stakeholders and Regional Economic Communities (RECs) to organise a regional workshop on “Combating Aflatoxins in the Maize Value Chain.”

The workshop will aim to galvanize multi-sectoral response towards the aflatoxin challenge in maize value chains of Africa in order to address its health, food security and trade challenges. The workshop is tentatively scheduled for September 2017.

Mrs. Wezi Chunga-Sambo, PACA Programme officer for East and Southern Africa, explained that the proposed meeting is in line with the mission of PACA to catalyze, coordinate and increase effective Aflatoxin control along agricultural value chains in Africa.

The PACA Secretariat in 2015 initiated the implementation of a series of workshops to address aflatoxin contamination in key value chains. The first of such workshops was on “Revamping the Groundnut Value Chain in West Africa through Aflatoxin Mitigation” held in Dakar, Senegal on September 1-2, 2015.
New Project on Aflasafe Offers Relief to African Farmers

Good news for Africa! Farmers in 11 African countries will soon have a natural indigenous product to combat aflatoxin. Aflatoxin is produced by a soil-inhabiting fungus that contaminates crops when they are growing, and that is still present postharvest. It is not destroyed by cooking. But it is however progressively displaced by Aflasafe, the product at the heart of the new project termed the Aflasafe Technology Transfer and Commercialization Project (ATTC). ATTC is implemented by the International Institute of Tropical Agriculture (IITA).

The project was officially launched at IITA Headquarters in Ibadan, Nigeria, by Mr. Ernest Aube on behalf of the Commissioner in Charge of Agriculture, Environment and Water Resources, at the Economic Community of West African States Commission. Attending were more than 120 representatives from the research, public and private sectors, civil society and international organizations.

Aflasafe is a revolutionary biocontrol product developed by IITA, the United States Department of Agriculture – Agriculture Research Service and national partners. So far, Aflasafe has been reported to achieve up to 98% reduction in aflatoxin on farm and in storage. The 11 ATTC countries are those where Aflasafe is either already registered, or is highly likely to be registered. They are Burkina Faso, Ghana, Kenya, Malawi, Mozambique, Nigeria, Senegal, Tanzania, The Gambia, Uganda and Zambia.

Speaking at the launch, Amare Ayalew, Program Manager, Partnership for Aflatoxin Control in Africa, highlighted the need for disseminating the innovation to the farmers. “African farmers need game-changing research technologies like Aflasafe to meet aflatoxin standards for international trade, and to nourish their families and the market with wholesome produce,” said Ayalew.

“To get aflasafe to the masses, we need many companies, millions of small-scale farmers, distributors, who know what Aflasafe can do to apply it. IITA is excited because the Institute is on the edge of reaching this goal,” IITA Deputy Director General, Partnerships for Delivery, Kenton Dashiell stated.

Corroborating the need to work with companies to spread the technology, Ranajit Bandyopadhyay, IITA Plant Pathologist and leader of the Africa-wide Aflasafe Initiative who has been working on the product for more than a decade now, noted that “This product is indigenous! Developing the technology was not difficult, taking it out to the end users is the challenge; therefore, partnership is very crucial”.

ATTC’s Managing Director, Abdou Konlambigue, said that the ATTC project was designed to identify strategic options for partnerships with companies or government agencies. “We look forward to making sure that this technology reaches farmers in the soonest time possible through strategic partnerships with governments, the private sector and other key stakeholders.”

The ATTC project is funded by the Bill & Melinda Gates Foundation and USAID, is a part of the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) and is in support of the Partnership for Aflatoxin Control in Africa (PACA).

(This is a contribution of IITA Aflasafe team)
Sahel Countries Endorse Aflasafe

Aflasafe has been approved by the Pesticide Regulatory Committee of the Interstate Committee for Drought Control in the Sahel (CILSS) as a bio control product for aflatoxin control in the Sahel.

The CILSS is an international organization consisting of countries in the Sahel region of Africa; Burkina Faso, Cape Verde, Gambia, Guinea-Bissau, Mali, Mauritania, Niger, Senegal and Chad.

This was made known by Mr. Omar Sane, Director of Agriculture, Senegal on Wednesday, March 22, 2017 when he chaired the launch of the product by the Aflasafe Technology Transfer and Marketing Project (ATTC) in Dakar, Senegal.

Aflasafe is a product developed by the International Institute of Tropical Agriculture (IITA) and the United States Department of Agriculture – Agriculture Research Service.

He commended the IITA for the initiative and stated that it will help to resolve some of the challenges caused by aflatoxin on groundnut and maize production in the country.

Mr. Abdou Konlambigue, Managing Director of ATTC recounted that in the 1960s and 1970s groundnuts accounted for 80% of Senegal’s income, while in The Gambia, 66% of agricultural export, but these had fast dwindled partly because of aflatoxins contamination.

He said various tests conducted over the past three years in Senegal had shown that Aflasafe is effective and it reduces aflatoxin contamination in maize and groundnut by 80-99%.

Mr. Kolambigue announced that an Aflasafe production plant was being established in the Kaolack region of Senegal to make the product easily available to farmers in the country and other neighboring countries.

Mr. Magatte N’doye, PACA Country Officer for Senegal announced that a national stakeholder meeting will soon be held to raise funds for the implementation of the National Action for Aflatoxin Mitigation for Senegal, which aims at holistic approaches including use of Aflasafe.
Imagine what will happen to the rural farmer and industry across the globe if processed food on the shelves in small shops, marts and malls are not patronized because consumers are not sure of the quality and safety of the product.

Both international and domestic trade will be hampered and the farmer will be out of job, so will be industries and the numerous workers across the globe; meaning millions of livelihood will be affected. Can you also conceive the health implications to the world population if processed foods on the shelves do not meet safety standards?

Fortunately, to some extent it is neither of the above scenarios. The consumer in Nairobi, Kenya can walk to the market and buy processed food from any part of the world with the confidence that it is safe for consumption because it meets certain food safety standards.

This is possible partly because of the existence of Codex Alimentarius Commission, which is a joint Food and Agriculture Organization (FAO) and the World Health Organization (WHO) body responsible for setting internationally recognized standards, codes, practices, guidelines and recommendations relating to food safety.

Codex is jointly sponsored by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) and comprise of more than 185 countries and 1 member organization (The European Union).

Agreed standards are voluntarily implemented by member countries. However, Codex standards are recognized globally including by the World Trade Organization (WTO), thereby motivating countries to join. Codex members cover 99% of the world’s population.

The 22nd Session FAO/WHO Codex Regional Coordinating Committee for Africa (CCAFRICA) took place in Nairobi, Kenya, January 16-20, 2017. It was attended by delegates from 25 countries across the continent and observers from WHO and FAO.

According to the FAO the meeting sought to “discuss food safety and food control issues as well as the emerging needs and challenges the region and its countries are facing. Among them is the pivotal role Small and Medium Enterprises (SMEs) are playing in raising food standards and delivering safe and quality food”.

Mr. Adan Mohammed, Kenyan Cabinet Secretary of the Ministry of Industry, Trade and Co-operatives, in an address opening the session said “… in Africa, most industries are facing major challenges related to aflatoxin in foods, heavy metals and carbon miles…” which need to be addressed to make the food industries competitive.

Dr. Chris Muyunda, Vice President of the Comprehensive Africa Agricultural Development Programme (CAADP) Non State Actors Coalition (CNC) and member of the PACA Steering Committee was the keynote speaker on the topic “SMEs and food trade: opportunities to build regional markets through the use of Codex standards”. He indicated that SMEs in Africa faced a number of challenges due to the different standards and regulations in different countries and called for harmonized Codex Alimentarius standards.

Mr. Gabriel Rugalema, FAO Representative said “food that is safe and of acceptable standard should not be a matter of choice. It should be imperative.”
Aflatoxin Deliberated at 1st All Africa Postharvest Congress and Exhibition

The 1st All Africa Postharvest Congress and Exhibition was held from March 28-31, 2017 in Nairobi, Kenya, under the theme “Reducing Food Losses and Waste: Sustainable Solutions for Africa.” It was organized by the University of Nairobi and a consortium of African Universities and Research & Development Institutions in conjunction with the World Food Preservation Center (WFPC).

The 1st All Africa Postharvest Congress and Exhibition aimed at developing actionable plans to reduce postharvest losses and waste by addressing issues relating to postharvest management of perishable crops, perishable animal products, non-perishable food commodities, capacity development and related social issues that affect postharvest management.

The event provided an opportunity for researchers, academics, farmers, industry, development agencies, civil society and policy makers to learn, share information, and build networks and partnerships.

The International Institute for Tropical Agriculture (IITA) and its partners including PACA organized a symposium under the theme “Safeguarding Africa’s food – Are we winning or losing the fight against aflatoxin?”

PACA, represented by Ms. Liz Ogutu, Senior Strategy and Operations Officer made the key note presentation on “Impacts and Mitigation of Aflatoxins on Agriculture, Trade and Health.” She highlighted the problem and incidence of aflatoxins in major commodities, and in the pilot countries, based on collected knowledge and the situation analysis undertaken by PACA and partners in the last two years.

Ms. Ogutu stated that the problem of aflatoxin was complex and needed a multi-sectoral approach to mitigate its effect on the continent.

Other presentations at the symposium that highlighted existing technologies and success stories included:
- “Pre and post-harvest technologies for aflatoxin management and recent approaches to mitigation” by Dr. George Mahuku, IITA East Africa;
- “Markets and potential challenges in uptake of interventions for aflatoxin mitigation in the African context” by Dr. Vivian Hoffman, IFPRI;
- “Private sector perspectives on aflatoxin management in food systems” by JB Cordaro, MARSInc;
- “Scaling-up of grain drying and storage technologies” by Sophie Walker, ACDI-VOCA; and
- “Experiences in the adoption process of aflasafe and other aflatoxin mitigation tools for use in the irrigation scheme” by Dr. Raphael Wanjogu, National Irrigation Board, Kenya.

A key highlight of the event was the inauguration of the “All Africa Postharvest Technology and Innovations Challenge,” which sought to celebrate emerging postharvest technologies and innovations with high potential for scale up. Aflasafe, biocontrol technology, and aflaSTOP, the storage and drying technologies for the control of aflatoxins were chosen among the top ten innovations.

PACA Secretariat congratulates the two teams for their achievements.
The 10th Meeting of the PACA Steering Committee was held in Maputo, Mozambique from March 1 -2, 2017. The Steering Committee is the highest decision making body for PACA with the additional mandate of playing emissary roles. Currently, 16 members are serving on the PACA Steering Committee (see list).

Dr. Godfrey Bahiigwa, Director of Rural Economy and Agriculture Department of the African Union (AU) Commission and Chair of the PACA steering Committee, commended members of the Steering Committee, both present and past, for their support to PACA and expressed his hope that PACA will continue to benefit from their expertise to make the commitment of the AU to aflatoxin mitigation in the continent successful. "As we deliberate on the many important issues over these two days, let us remember the primary reason why we are here, that is to address the aflatoxin challenge that continues to thwart Africa's efforts at achieving food security, improved nutrition and health outcomes and attaining agriculture-led economic growth” he added. He welcomed two new members of the PACA Steering Committee, namely: the West and Central African Council for Agricultural Research and Development/Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles (CORAF/WECARD), represented by the Executive Director, Dr. Abdou Tenkouano; and the CAADP Non State Actors Coalition (CNC) represented by the Coordinator, Mr. Kop'ep K. Dabugat.

The Steering Committee reviewed and endorsed progress reports, work plans and budgets as well as concept notes for implementation of key activities of 2017, for major convenings of 2017/18 and for fund raising.

A summary of important guidance from the 10th Meeting of the Steering Committee is outlined below:
- PACA, as one of the pioneers of country-led and stakeholder aligned approaches, should show how partner funded projects can spur government action;
- Guidance was given to PACA Secretariat on further platforms to use and partners to work with closely;
- Comments on PACA’s Communication Strategy with a focus on impact using the limited resources available and how best to measure success;
- PACA’s knowledge management function focusing on a knowledge repository and the Africa Aflatoxin Information Management System (AfricaAIMS) developed around PACA’s priority questions and based on segmentation of the users;
- Specific recommendations on implementation of 2017 and 2018 plans of the PACA Secretariat;
- Approval of a regional workshop on enhancing production and utilization of maize value chains through aflatoxin control to be convened in 2017 and to convene a similar workshop for dairy and poultry value chains in 2018;
- Approval of the Secretariat’s proposal to optimize the PACA website and make it more dynamic to better serve the PACA Community including active communities of practice and social media.